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ABSTRACT

PRESERVICE TEACHERS' ATTITUDES AND EFFICACY BELIEFS
TOWARD INCLUSION OF STUDENTS WITH AUTISM
SPECTRUM DISORDERS IN THE MIDWESTERN
REGION OF THE UNITED STATES

by

Amy Cavanaugh Cramer

Chair: Rudolph Bailey

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: PRESERVICE TEACHERS' ATTITUDES AND EFFICACY BELIEFS
TOWARD INCLUSION OF STUDENTS WITH AUTISM SPECTRUM
DISORDERS IN THE MIDWESTERN REGION OF THE UNITED
STATES

Name of researcher: Amy Cavanaugh Cramer

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Date completed: June 2014

Problem Statement

The increased prevalence of children identified with Autism Spectrum Disorders (ASD) will likely result in these students being placed more frequently in general education classrooms. As a result, general education teachers will be responsible, and must be willing and adequately prepared, for teaching students with ASD. Attitudes are one of the most important predictors for successful inclusion. Teachers indicate a willingness to include students with ASD. However, they do not feel prepared for inclusion for students with ASD.

Teacher training and efficacy beliefs are related to teachers' ability to educate students with disabilities. Since teacher training occurs at the preservice teacher

preparation stage, it is imperative that we study attitudes and efficacy beliefs of preservice teachers. Researchers have reported positive preservice teachers' attitudes toward inclusion of students with ASD; however, preservice teachers did not feel prepared.

Thus, the purposes of this study were to (a) to investigate preservice teachers' attitudes toward inclusion of students with ASD; (b) investigate preservice teachers' efficacy beliefs about their ability to educate children with ASD and disabilities in an inclusive setting; and (c) determine if a combination of special education coursework, preservice teacher experience, preservice teacher gender, and preservice teacher efficacy predict preservice teachers' attitudes towards inclusion of students with ASD.

Methods

Preservice teachers from the Midwestern region of the United States ($N = 1,028$) completed an adapted version of The Opinions Relative to the Integration of Students with Disabilities (ORI) and The Teachers' Sense of Efficacy Scale (TSES) to measure preservice teachers' attitudes and efficacy beliefs toward inclusion of students with ASD.

Results

Results suggest preservice teachers have positive attitudes toward inclusion of students with ASD. However, their efficacy beliefs about their ability to educate students with ASD in an inclusive classroom were low. Preservice teachers had significantly lower efficacy beliefs about their ability to educate students with ASD than for their ability to educate students with disabilities in an inclusive classroom. Preservice teachers did not feel prepared for inclusion of students with ASD.

Preservice teachers' attitudes toward inclusion of students with ASD were correlated with efficacy beliefs about their ability to educate students with ASD in an inclusive classroom. Teacher efficacy contributed the most to the variance of preservice teachers' attitudes toward inclusion of students with ASD (7.2%).

Conclusion

Preservice teachers have positive attitudes toward inclusion of students with ASD, but do not feel prepared for inclusion. They believed they lack the skill and ability necessary to teach students with ASD. Further, the variables special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy can be eliminated as primary variables influencing preservice teachers' attitudes toward inclusion.

Andrews University

School of Education

PRESERVICE TEACHERS' ATTITUDES AND EFFICACY BELIEFS
TOWARD INCLUSION OF STUDENTS WITH AUTISM
SPECTRUM DISORDERS IN THE MIDWESTERN
REGION OF THE UNITED STATES

A Dissertation

Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by

Amy Cavanaugh Cramer

June 2014

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TABLE OF CONTENTS

LIST OF TABLES	vii
ACKNOWLEDGMENTS	ix
Chapter	
1. INTRODUCTION AND BACKGROUND	1
Variables Related to Preservice Teachers' Attitudes.....	6
Action Through Behavioral Factors.....	7
Internal-Personal Factors	8
Environmental Events	10
Statement of the Problem.....	11
Purpose of the Study	14
Research Questions	14
Hypotheses.....	15
Theoretical Framework.....	15
Significance of the Study	16
Definitions and Terminology.....	17
Limitations	21
Delimitations.....	22
Assumptions.....	22
Summary	22
Organization of the Study	23
2. REVIEW OF RELATED LITERATURE	24
Prevalence of Autism Spectrum Disorders	24
Inclusion of Students With Special Needs.....	25
Preservice Teachers' Attitudes Toward Inclusion	27
Variables Related to Preservice Teachers' Attitudes	
Toward Inclusion	35
Action Through Behavioral Factors: Preservice Teacher	
Experience.....	36
Internal-Personal Factors	39
Preservice Teachers' Gender	39
Preservice Teachers' Efficacy.....	41

The relationship between preservice teachers' efficacy beliefs and attitudes toward inclusion of students with disabilities	43
Relationship between preservice teachers' efficacy beliefs and teacher training	45
Changes in preservice teachers' efficacy beliefs	46
Preservice teachers' efficacy beliefs toward inclusion of students with specific disabilities.....	48
Environmental Factors	49
Preservice Teacher Coursework	49
Student's Type of Disability	52
Training Requirements of Education Programs.....	54
Teachers' Attitudes Toward Inclusion.....	57
Action Through Behavioral Factors: Teacher Experience.....	60
Internal-Personal Factors	63
Teacher Gender	63
Teacher Efficacy	64
Relationship between teachers' efficacy and teacher training	66
The relationship between teachers' attitudes and efficacy beliefs toward inclusion	67
Teacher Efficacy Toward Specific Disabilities	68
Environmental Factors	72
Coursework	72
Student's Types of Disability.....	74
Survey Instruments	75
The Opinions Relative to Integration of Students With Disabilities (ORI).....	76
Teachers' Sense of Efficacy Scale (TSES)	78
Summary	79
3. METHODOLOGY	80
Introduction.....	80
Research Design.....	80
Population and Sample	81
Instruments.....	82
Opinions Relative to Integration of Students With Disabilities (ORI).....	82
Opinions Relative to Inclusion of Students With Autism Spectrum Disorders (ORI-ASD).....	83
ORI Validity.....	84
ORI Reliability.....	85
Teachers' Sense of Efficacy Scale (TSES).....	85
TSES Validity	86
TSES Reliability	87

Demographic Information.....	88
Pilot Study.....	88
Procedure	90
Threats to Internal Validity.....	91
Research Questions.....	91
Treatment of Data	92
Data Analysis.....	92
Tests of Study Hypotheses.....	93
Factor Analysis Criterion.....	94
Data Screening/Testing Assumptions	94
Number of Factors Retained	95
Rotation of Factors.....	96
Identification of Items in Each Factor	96
Naming and Definition of Factors	96
4. ANALYSIS OF DATA.....	97
Description of the Sample.....	98
Demographics	98
Academic Preparation.....	98
Experience and Understanding of Efficacy and ASD.....	100
Factor Analysis of the Opinions Relative to the Inclusion of Students With Disabilities–Autism Spectrum Disorders (ORI-ASD).....	102
Teachers’ Sense of Efficacy Scale (TSES).....	110
Factor Solutions for the ORI-ASD and the TSES Scales	115
Research Questions.....	117
Research Question 1	117
Research Question 2	118
Research Question 3	121
Research Question 4	122
5. SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS.....	133
Summary of Methodology	134
Validation of the Instruments.....	135
Research Questions.....	137
Research Question 1	137
Research Question 2	137
Research Question 3	138
Research Question 4	138
Discussion.....	139
Conclusions.....	147
Implications of the Study.....	149
Limitations	151

Suggestions for Further Research	151
Summary	153
Appendix	
A. LETTERS TO SCHOOL OFFICIALS	154
B. LETTERS TO PRESERVICE TEACHERS	158
C. SURVEYS	162
D. APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH.....	195
E. SCALE USE PERMISSIONS	201
F. VARIABLE TABLE	206
G. IRB APPROVAL FORMS	208
H. ADDITIONAL TABLES	211
REFERENCE LIST	226
VITA.....	239

LIST OF TABLES

1. Preservice Teachers' Demographics.....	99
2. Preservice Teachers' Academic Preparation	101
3. Preservice Teachers' Experiences With ASD and Efficacy Beliefs	103
4. Measures of Sample Adequacy Criterion	104
5. Factor Retention Methods, ORI-ASD.....	104
6. Communalities and Percentage of Explained Variance, ORI-ASD.....	104
7. Modified ORI-ASD Two-Factor Model, Pattern Matrix	108
8. Factor Retention Methods, TSES	112
9. Communalities and Percentage of Explained Variance, TSES	112
10. TSES One-Factor Model, Factor Matrix	114
11. Reliability Estimates	117
12. Adapted ORI-ASD Factor I–Attitudes Toward Inclusion	119
13. ORI-ASD Factor II–Efficacy Toward Inclusion.....	122
14. TSES Factor I–Teacher Efficacy	123
15. Correlations for Efficacy Beliefs and Independent Variables	126
16. Preservice Teachers' Demographics–Independent Variable Comparison of Means	128
17. Correlations, Coefficients, <i>p</i> Values, and Importance of the Demographic Variable Teacher Efficacy to Teachers' Overall Attitudes Toward Inclusion of Students With ASD (CATREG)	129

18. Correlations, Coefficients, <i>p</i> Values, and Importance of the Demographic Variables Teacher Efficacy, Special Education Courses, Experience With ASD, Understanding of ASD, and Understanding of Teacher Efficacy to Teachers' Overall Attitudes Toward Inclusion of Students With ASD (CATREG)	130
19. Correlations, Coefficients, <i>p</i> Values, and Importance of the Demographic Variables to Teachers' Overall Attitudes Toward Inclusion of Students WITH ASD (CATREG)	131

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CHAPTER 1

INTRODUCTION AND BACKGROUND

The incidence of individuals identified with Autism Spectrum Disorders (ASD) has significantly increased over the last decade. The most recent prevalence statistics indicate that 1 in 68 children is identified with ASD (Centers for Disease Control [CDC], 2014). As these children reach school age, general education teachers must be willing and adequately prepared for inclusion of students with ASD. One of the most important predictors for successful inclusion of students with disabilities relates to the attitudes of general education teachers (Alghazo, Dodeen, & Algaryouti, 2003; Martin & Kudláček, 2010; Romi & Leyser, 2006). This was further articulated in a statement by Carroll, Forlin, and Jobling (2003), “Teachers set the tone of classrooms, and as such, the success of inclusion may well depend upon the prevailing attitudes of teachers as they interact with students with disabilities in their classrooms” (p. 65).

Four studies are available regarding teachers’ attitudes toward inclusion of students with ASD. These studies indicate teacher willingness to include students with ASD into the general education classroom (McGregor & Campbell, 2001; Park & Chitiyo, 2011; Segall, 2008; Wilkerson, 2012). Scottish teachers believed staff attitude was the key to successful integration of students with ASD (McGregor & Campbell, 2001). Of concern, 50% of the ASD experienced teachers did not feel prepared to educate students with ASD in the general education classroom. The study used a single

survey question to measure teachers' attitudes toward inclusion, highlighting a weakness and need for further research.

Segall (2008) and Wilkerson (2012) reported similar findings. Teachers had positive attitudes toward inclusion of students with ASD; however, they reported a lack of knowledge regarding inclusionary practices for students with ASD. Teachers believed responsibility for teaching students with autism should be shared between special and general education teachers (Wilkerson, 2012). Further, over half the teachers in Wilkerson's (2012) study believed students with ASD should be taught in separate classrooms. Teachers' had positive attitudes toward inclusion of students with ASD, but demonstrated more negative attitudes through their individual item responses advocating for separate classrooms for students with ASD.

Attitude differences were reported among teachers in Park and Chitiyo's (2011) study regarding inclusion of students with ASD based on the teacher's gender, age, and training. Young female teachers ($M = 4.14$) who had attended multiple autism workshops had more positive attitudes toward inclusion of students with autism than did males ($M = 3.71$) (Park & Chitiyo, 2011). A 30-year-old scale was used to measure teachers' attitudes among a small sample of teachers ($N = 127$). These weaknesses highlight the need for additional research using an updated scale and a larger sample of teachers for generalization purposes.

Two research studies were available regarding preservice teachers' attitudes toward inclusion of students with ASD (Barned, Flanagan Knapp, & Neuharth-Pritchett, 2010; Park, Chitiyo, & Choi, 2010). Park et al. (2010) used a total score from The Autism Attitude Scale for Teachers to calculate preservice teachers' attitudes toward

inclusion ($N = 131$). The authors reported positive attitudes among preservice teachers but neglected to discuss individual item responses indicative of negative attitudes. For example, most preservice teachers agreed with the following statements, “Typically developing children and children with autism should be taught in separate schools,” “If I had the choice, I would teach in a school in which there were no children with autism,” “It’s unfair to ask teachers to accept children with autism into their school,” and “Teachers not specifically trained in special education should not be expected to deal with a child with autism” (Park et al., 2010, p. 110). These statements contradict Park et al.’s (2010) overall findings that preservice teachers’ have positive attitudes toward inclusion of students with ASD.

The second preservice teacher study included 15 female participants who expressed apprehension about inclusion of all students with ASD despite having positive attitudes (Barned et al., 2011). None of the preservice teachers had specific training regarding inclusion of students with ASD. This lack of training may have contributed to their apprehension. These two studies included a small sample and only female preservice teachers. Thus, additional studies should be completed to further research on preservice teachers’ attitudes toward inclusion of students with ASD.

In summary, research reports positive attitudes among teachers and preservice teachers toward inclusion of students with ASD. However, both groups raised concerns about their level of preparation and willingness for inclusion of students with ASD (Barned et al., 2011; McGregor & Campbell, 2001; Park et al., 2010; Wilkerson, 2012). Teachers and preservice teachers believed inclusion was not appropriate for all students with ASD (Barned et al., 2011; McGregor & Campbell, 2001; Segall, 2008; Wilkerson,

2012). Additionally, attitude differences were reported among preservice teachers and teachers based on their gender, age, and level of training (Park & Chitiyo, 2011; Park et al., 2010).

Preservice teachers had positive attitudes toward inclusion of students with disabilities (Ahsan, Sharma, & Deppeler, 2012; Gao & Mager, 2011; Kim, 2011; Martin & Kudláček, 2010; Mayhew, 1994; Romi & Leyser, 2006). These studies do not separate ‘students with disabilities’ into specific disability categories. Keeping this in mind, preservice teachers reported a lack of training and expressed concerns for inclusion of students with disabilities (Burke & Sutherland, 2004; Romi & Leyser, 2006). By not separating disability areas, it is impossible to know which disability categories teachers are responding. Autism Spectrum Disorders are a specific disability area and should be distinguished from the general category of disabilities.

Since teacher attitudes toward inclusion are related to teacher efficacy beliefs about their ability to educate students with disabilities in an inclusive setting (Ahsan et al., 2012; Gao & Mager, 2011; Romi & Leyser, 2006) and teacher efficacy beliefs are related to teacher training (Forlin, Cedillo, Romero-Contreras, Fletcher, & Hernandez, 2010; Knoblauch & Woolfolk Hoy, 2008; Walls, 2007), it is important to investigate preservice teachers’ efficacy beliefs about their ability to educate students with ASD given that teacher training occurs at the preservice teacher preparation stage.

Several authors report higher efficacy beliefs among preservice teachers regarding their ability to educate students with disabilities in an inclusive setting (Ahsan et al., 2012; Forlin et al., 2010; Gao & Mager, 2011; Romi & Leyser, 2006). Additional studies have differentiated teacher efficacy beliefs by student disability (Atiles, Jones, & Kim,

2012; Block, Hutzler, Barak, & Klavina, 2013; Hartmann, 2012; Randoll, 2008). Morgan (2013) and Taliaferro (2010) differentiated teacher efficacy by the ability to educate students with ASD in an inclusive setting; each reported high teacher efficacy beliefs. Siu and Ho (2010) focused on improving teacher efficacy about their ability to educate students with ASD in inclusive classrooms. Teachers who used the Applied Behavior Analysis (ABA) approach had higher efficacy beliefs than those using the Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) method. Further, mastery experiences, vicarious experiences, social persuasion, and teacher physiological states were all found to be significant predictors of self-efficacy toward inclusion of students with ASD (Busby, Ingram, Bowron, Oliver, & Lyons, 2012; Taliaferro, 2010). Efficacy beliefs were positively related to teacher behaviors for supporting the educational needs of students with ASD (Morgan, 2013).

The drastic increase in ASD prevalence makes it important to study preservice teachers' attitudes toward inclusion and efficacy beliefs about their ability to educate students with ASD in an inclusive setting. Further, only two studies have specifically focused on preservice teachers' attitudes toward inclusion of students with ASD. No studies have specifically focused on preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting. Students identified with ASD have specific social, behavioral, academic, and sensory difficulties within the classroom (Mesibov & Shea, 1996). Therefore, it is important to evaluate preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive classroom separately from inclusion of students with disabilities. Identification of preservice teachers' attitudes toward

inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings may serve to better prepare preservice teachers' for the classroom so they will be able and willing to implement inclusionary practices.

Variables Related to Preservice Teachers' Attitudes

Variables that contribute to preservice teachers' attitudes toward inclusion of students with disabilities include: coursework (El-Ashry, 2009; Kim, 2011; Mayhew, 1994; Park et al., 2010; Powers, 1992; Shade & Stewart, 2001; Shadreck, 2012; Shier, 2002; Swain, Nordness, & Leader-Janssen, 2012), teacher gender (El-Ashry, 2009; Forlin, Tait, Carroll, & Jobling, 1999; Garriott, Miller, & Snyder, 2003; Park et al., 2010; Romi & Leyser, 2006), teacher experience with ASD/disabilities (Forlin, Loreman, Sharma, & Earle, 2009; Hodge & Jansma, 1999; Kowalski & Rizzo, 1996; Park et al., 2010), teacher efficacy (Ahsan et al., 2012; Forlin et al., 2010; Gao & Mager, 2011; Knoblauch & Woolfolk Hoy, 2008; Romi & Leyser, 2006; Walls, 2007), and the student's type of disability (Barned et al., 2011; El-Ashry, 2009; Forlin & Chambers, 2011; Gao & Mager, 2011; Hastings & Oakford, 2003; Sharma, Moore, & Sonawane, 2009).

Bandura's (1999) social cognitive theory can help explain the relationship between the variables contributing to preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive setting. The social cognitive theory is a three-pronged model which includes: action through behavioral factors, internal-personal factors, and environmental events. Each prong of the social cognitive theory influences the other and together influence preservice teachers' attitudes toward inclusion of students with ASD. The next

section will outline how Bandura's (1999) social cognitive theory influences preservice teachers' attitudes and efficacy beliefs toward inclusion of students with ASD. See Figure 1.

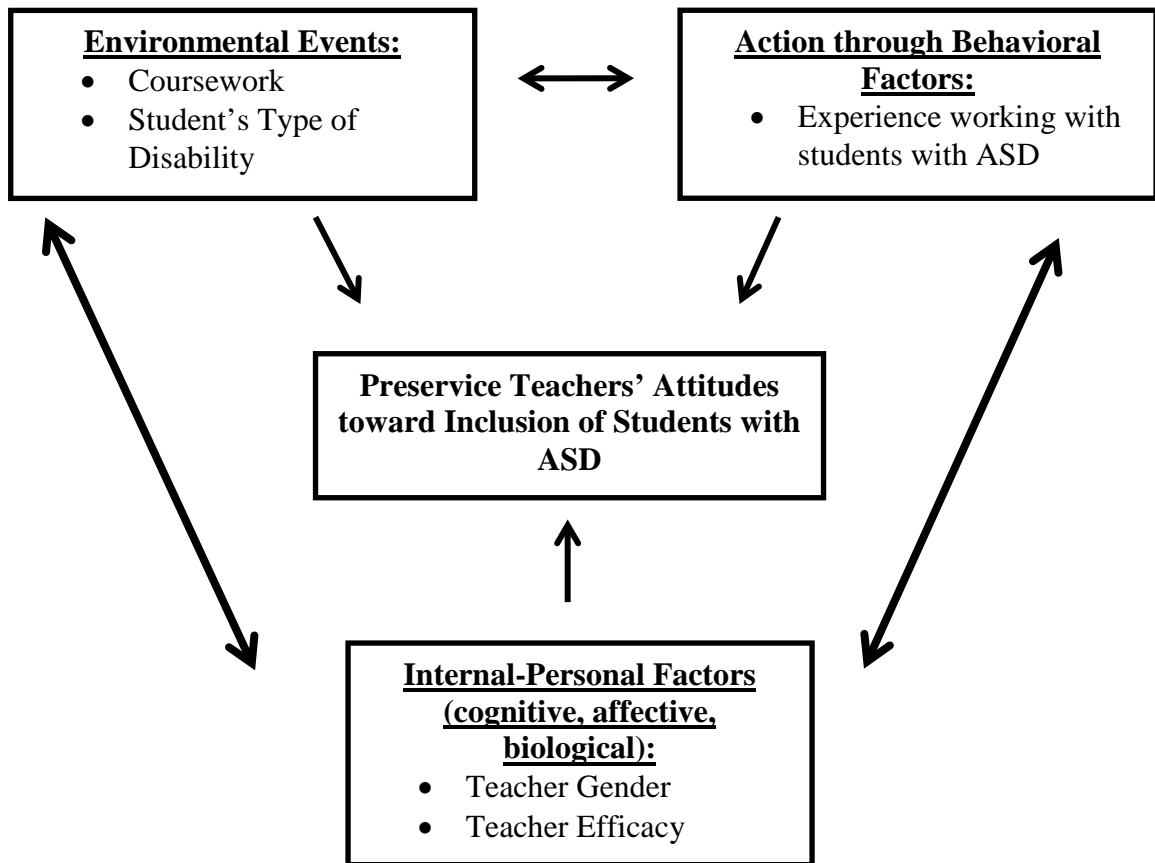


Figure 1. Social Cognitive Theory: Triadic reciprocal causation.

Action Through Behavioral Factors

Action (through behavioral factors) is operationalized through teacher experience working with students with ASD and/or disabilities. Researchers have reported a relationship between preservice teachers' attitudes toward inclusion of students with disabilities and prior experience (Forlin et al., 2009; Hodge & Jansma, 1999; Kowalski &

Rizzo, 1996; Park et al. 2010). Preservice teachers with prior experience working with students with disabilities had more positive attitudes than those without experience regarding inclusion (Forlin et al., 2009; Hodge & Jansma, 1999; Kowalski & Rizzo, 1996; Park et al., 2010). Conversely, prior experience was not found to be a significant predictor of preservice teachers' attitudes toward inclusion of students with disabilities in several studies (Forlin & Chambers, 2011; Hastings & Oakford, 2003). These differing preservice teacher results about attitudes toward inclusion of students with disabilities along with a lack of differentiation by disability type highlight a need for additional research.

Internal-Personal Factors

Internal-personal factors are operationalized through the teacher's gender and teacher efficacy. Teacher gender is related to preservice teachers' attitudes toward inclusion of students with ASD (Park et al., 2010) and disabilities (Forlin et al., 1999; Garriott et al., 2003). Females have more positive attitudes than do males toward inclusion of students with ASD and students with disabilities (Forlin et al., 1999; Garriott et al., 2003; Park et al., 2010). Additionally, females consider inclusion preferable over more restrictive special education placements for students with disabilities than do males (Garriott et al., 2003).

Teacher efficacy beliefs are also an internal-personal factor related to preservice teachers' attitudes toward inclusion of students with disabilities (Ahsan et al., 2012; Gao & Mager, 2011; Romi & Leyser, 2006). Preservice teachers have higher efficacy beliefs about their ability to educate students with disabilities in inclusive classrooms (Ahsan et al., 2012; Gao & Mager, 2011; Romi & Leyser, 2006). There is no current information

available for preservice teachers' efficacy beliefs about their ability to educate students with ASD in inclusive settings. However, there is research available for teachers' efficacy beliefs about their ability to educate students with ASD in inclusive settings.

Teachers have high efficacy beliefs about their ability to educate students with ASD in inclusive settings (Busby et al., 2012; Morgan, 2013; Ruble, Usher, & McGrew, 2011; Siu & Ho, 2010; Taliaferro, 2010). Additional researchers focused on the variables influencing teacher efficacy beliefs about their ability to educate students with disabilities in inclusive settings (Busby et al., 2012; Ruble et al., 2011; Siu & Ho, 2010; Taliaferro, 2010). Specifically, it was recommended that inclusionary coursework be added to teacher preparation programs to increase teachers' efficacy beliefs about their ability to educate students with ASD (Busby et al., 2012; Taliaferro, 2010). Further, Busby et al. (2012) and Ruble et al. (2011) reported the significant influence of a teacher's psychological and affective state upon their efficacy toward inclusion. Busby et al. (2012) noted self-efficacy is task-related and may not measure the instructional tasks most critical for teachers of students with autism.

This is not a new notion; Bandura (1997) reported efficacy differences across subject areas. For this reason, several studies constructed scales to measure teacher efficacy beliefs about their ability to educate students with specific disability areas in inclusive settings. For example, Hartmann (2012) constructed a scale to measure teacher efficacy beliefs about their ability to educate students with deaf-blindness in an inclusive setting. Block et al. (2013) developed a scale to measure physical education teachers' efficacy beliefs about their ability to educate students with intellectual disabilities, physical disabilities, and visual impairments in inclusive settings. Atilas et al. (2012)

studied preservice teachers' efficacy beliefs about their ability to educate students with developmental delays in inclusive settings. These studies strengthen the notion that efficacy beliefs are not uniform across disability areas. It is important to study preservice teachers' efficacy beliefs about their ability to educate students with additional disability areas (specifically ASD) in inclusive settings.

Environmental Events

Environmental events are operationalized through preservice teachers' coursework and the students' type of disability. Preservice teachers majoring in special education had more positive attitudes toward inclusion of students with ASD (Park et al., 2010) and disabilities (Kim, 2011; Powers, 1992; Shade & Stewart, 2001; Shier, 2002; Swain et al., 2012) than did those in general education. However, preservice teachers continued to feel unprepared for inclusion believing they had been insufficiently trained in their teacher preparation programs (El-Ashry, 2009; Shadreck, 2012).

Environmental events also include the student's type of disability. Preservice teachers' attitudes toward inclusion are related to the student's type of disability (Barned et al., 2011; El-Ashry, 2009; Forlin & Chambers, 2011; Gao & Mager, 2011; Hastings & Oakford, 2003; Martin & Kudláček, 2010; Park et al., 2010; Sharma et al., 2009). Two preservice teacher studies reported positive attitudes toward inclusion of students with ASD (Barned et al., 2011; Park et al., 2010). One preservice teacher study reported positive preservice teachers' attitudes toward inclusion of students with intellectual disabilities (Hastings & Oakford, 2003). However, several preservice teacher studies reported negative attitudes toward inclusion of students with behavioral and/or emotional

disorders (El-Ashry, 2009; Gao & Mager, 2011; Hastings & Oakford, 2003; Sharma et al., 2009).

An exploration of teacher studies shows similar reservations about inclusion based on a student's disability type. Teachers were less accepting of students with severe disabilities (Forlin, Hattie, & Douglas, 1996; Scruggs & Mastropieri, 1996; Stoiber, Gettinger, & Goetz, 1998), intellectual disabilities (Forlin, 1995; Soodak, Podell, & Lehman, 1998; Stoiber et al., 1998; Thomas, 1985), and emotional and behavioral problems (Avramidis, Bayliss, & Burden, 2000; Hastings & Oakford, 2003; Jobe, Rust, & Brissie, 1996; Kwapy, 2004). Because students with ASD often display traits similar to those of students with emotional and/or behavioral problems, it is important to explore preservice teachers' attitudes toward ASD.

This study provides research on preservice teachers' attitudes towards inclusion of students with ASD and efficacy beliefs about their ability to educate students with disabilities in inclusive settings. Identification of preservice teachers' attitudes and efficacy beliefs may serve to better prepare preservice teachers for the classroom so they can feel confident, positive, and successful.

Statement of the Problem

The incidence of individuals identified with ASD has significantly increased over the last decade. Currently, 1 in 68 children are identified with ASD (CDC, 2014). The increase in identification of children with ASD will likely result in an increased placement of students with ASD into general education classrooms. This demands that general education teachers are willing and prepared (efficacious) to teach students with ASD. With regard to ASD, only two studies investigated preservice teachers' attitudes

toward inclusion. Both Park et al. (2010) and Barned et al. (2011) reported positive attitudes of preservice teachers toward inclusion. However, preservice teachers did not feel prepared for inclusion of students with ASD (Barned et al., 2011). Further, attitudes toward inclusion of students with ASD were influenced by the teacher's gender, teacher experience, and academic focus (Park et al., 2010). Four studies investigated teachers' attitudes toward inclusion of students with ASD. Each suggests a willingness to include students with ASD; however, teachers reported they lacked training for inclusion (McGregor & Campbell, 2001; Park & Chitiyo, 2011; Segall, 2008; Wilkerson, 2012).

Attitude differences are evident for preservice teachers based on the student's type of disability. For example, preservice teachers had negative attitudes toward inclusion of students with disruptive disorders (Sharma et al., 2009), emotional disorders, and behavioral problems (Gao & Mager, 2011; Hastings & Oakford, 2003). Further, preservice teachers were less than positive about inclusion of students who were physically aggressive (Forlin & Chambers, 2011). Several authors reported positive attitudes among preservice teachers toward inclusion of students with disabilities; however, preservice teachers did not feel adequately prepared to make inclusion successful (Burke & Sutherland, 2004; Garriott et al., 2003; Gent, 1996; Jung, 2007; Martin & Kudláček, 2010; Mayhew, 1994; Romi & Leyser, 2006; Yellin et al., 2003).

In regard to efficacy beliefs, several authors developed scales to measure efficacy beliefs toward their ability to educate students across specific disability areas. For example, Atilas et al. (2012) aimed to examine preservice teachers' efficacy beliefs about their ability to include students with developmental delays in the general classroom. Block et al. (2013) aimed to validate an efficacy scale to determine teachers' ability for

educating students with intellectual disabilities, physical disabilities, and visual impairments in the general classroom. And, Hartmann (2012) constructed a scale to measure special educators' efficacy beliefs about their ability to include students with deaf-blindness. Randoll (2008) reported high efficacy beliefs among teachers' ability to educate students with physical disabilities and social maladjustments; while Holman (2011) reported high efficacy beliefs among elementary physical educators toward their ability to include students with orthopedic impairments. The development of efficacy scales to measure teachers' beliefs about their ability to educate students with specific disabilities demonstrates the likelihood of efficacy differences across other disability areas.

In conclusion, the literature demonstrates a lack of research regarding preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings. The majority of preservice teacher studies have focused on attitudes toward inclusion of students with disabilities. It is difficult to ascertain what disability category preservice teachers are responding to when the disability categories are grouped together. The reported attitude differences among preservice teachers by student type of disability raises the question: Are there preservice teacher attitude differences for inclusion of students with ASD? Further, do preservice teachers feel efficacious for inclusion, specifically inclusion of students with ASD? This study fills the gaps left by existing research and provides research on preservice teachers' attitudes towards inclusion of students with ASD and efficacy beliefs toward their ability to educate students with ASD in inclusive classrooms.

Purpose of the Study

The primary purpose of this study was to investigate preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive setting. Therefore, the purposes of this study were to (a) investigate preservice teachers' attitudes toward inclusion of students with ASD; (b) investigate preservice teachers' efficacy beliefs about their ability to educate students with ASD and disabilities in an inclusive setting; (c) determine if there is a relationship between preservice teachers' attitudes and efficacy beliefs about their ability to educate students with ASD in an inclusive setting; and (d) determine if a combination of special education coursework, preservice teacher experience, preservice teacher gender, and preservice teacher efficacy predict preservice teachers' attitudes towards inclusion of students with ASD.

Research Questions

This study attempted to answer the following questions and test the following hypotheses:

1. What are preservice teachers' attitudes towards inclusion of students with ASD within the general education classroom?
2. What are preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting?
3. What are preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting?

4. Does a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict the dependent variable preservice teachers' attitudes towards inclusion of students?

Hypotheses

Hypothesis 1: Preservice teachers have a positive attitude toward inclusion of students with ASD within the general education classroom.

Hypothesis 2: Preservice teachers have positive efficacy beliefs toward their ability to educate students with ASD in an inclusive setting.

Hypothesis 3: Preservice teachers have positive efficacy beliefs about their ability to educate students with disabilities in an inclusive setting.

Hypothesis 4: Preservice teacher attitudes toward inclusion of students with ASD can be predicted by a linear combination of the preservice teacher's special education coursework, teacher experience, teacher gender, and teacher efficacy.

Theoretical Framework

Bandura's (1999) social cognitive theory was used to help explain the variables within this study. The social cognitive theory is used to study human behavior using a three-pronged approach: (a) action through behavior factors; (b) internal-personal factors (cognitive, affective, and biological events); and (c) and environmental events (Bandura, 1999). All three prongs influence each other. Within this study, the three prongs will collaboratively influence preservice teachers' attitudes toward inclusion of students with ASD.

As applied to this study, action has been interpreted through experience working

with students with ASD. Internal-personal factors are operationalized as teacher gender and teacher efficacy. Environmental events are represented through special education coursework in teacher training programs and the student's type of disability. The independent variables (special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy) are predicted to help explain the dependent variable, preservice teachers' attitudes toward inclusion of students with ASD.

Significance of the Study

This study is an investigation of preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive setting. The Education for All Handicapped Children Act (1975) required all students be educated in the Least Restrictive Environment (LRE), regardless of disability. Due to an increase in identification of students with ASD, more students with ASD are attending public schools within general education classrooms. It is important to determine preservice teachers' attitudes toward inclusion of students with ASD because teacher attitudes are related to the successful inclusion of students with disabilities (Alghazo et al., 2003; Martin & Kudláček, 2010; Romi & Leyser, 2006). Further, teachers' attitudes are related to teacher efficacy beliefs about their ability to educate students with disabilities in an inclusive setting (Ahsan et al., 2012; Gao & Mager, 2011; Romi & Leyser, 2006). Thus, if preservice teachers feel efficacious, then it is likely they will have more positive attitudes toward inclusion. It is pertinent to shape teachers' attitudes toward inclusion of students and efficacy beliefs about their ability to educate students with ASD in inclusive settings prior to their entrance into the teaching field.

By understanding the factors related to preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings, teacher education programs may be able to implement curriculum changes. Curriculum changes may help preservice teachers become better prepared to teach and understand the unique needs of students with ASD. Results from this study may help preservice teachers gain insight into their attitudes and efficacy beliefs toward inclusion of students with ASD. Identification of preservice teachers' attitudes and efficacy beliefs towards inclusion of students with ASD may help facilitate inclusion of students with ASD within the general education classroom.

Definitions and Terminology

Within this study various terms are defined as follows:

Accommodation: "A change in testing materials or procedures that enables students to participate in assessments in ways that reflect their skills and abilities rather than their disabilities" (Salvia, Ysseldyke, & Bolt, 2007, p. 682).

Americans With Disabilities Act: "Prohibits discrimination against persons with disabilities in employment, transportation, public access, local government, and telecommunications" (Woolfolk, 2010, p. 553).

Attitude: "An idea charged with emotion which predisposes a class of actions to a particular class of social situations" (Triandis, 1971, p. 2).

Autism: "Developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3 and ranging from mild to major" (Woolfolk, 2007, p. 613).

Autism Spectrum Disorders (ASD): A group of five related developmental disorders that share common core deficits or difficulties in social relationships, communication, and ritualistic behaviors; differentiated from one another primarily by the age of onset and severity of various systems; includes autistic disorder, Asperger's syndrome, Rett syndrome, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified (Heward, 2006).

Centers for Disease Control and Prevention (CDC): A federal agency in the Department of Health. The CDC works to protect public health through partnerships with state health departments and focuses national attention on developing and applying disease prevention and control (CDC, 2012).

Diagnostic and Statistical Manual of Mental Disorders–Fourth Edition Text Revision (DSM-IV-TR): The fourth edition of a system for classifying psychological problems and disorders. It is published by the American Psychiatric Association and is the most widely used system within the United States (Comer, 1995).

Efficacy: A person's belief that he or she is capable of achieving a goal. Because they believe they are capable, they then modify their behavior in order to be successful in achieving their goal (Bandura, 1977).

Exceptional Students: "Students who have abilities or problems so significant that they require special education or other services to reach their potential" (Woolfolk, 2007, p. 616).

Free and Appropriate Public Education (FAPE): Special and related services that are provided at public expense, under public supervision and direction, and without charge. These services must meet the standards of the state involved and include an

appropriate preschool, elementary, or secondary school education within the state involved.

IDEIA: The Individuals with Disabilities Education Improvement Act (IDEIA) is a law ensuring services to children with disabilities throughout the nation. “The latest amendment of PL 94-142, guarantees a free public education to all children regardless of disability” (Woolfolk, 2010, p. 557).

Inclusion: “Inclusion implies that students will be taught outside the regular education classroom only when all available methods have been tried and failed to meet their needs. If a student is pulled out of the general education classroom for instruction in another placement, the intent is for the pullout to be temporary and for the student to be reintegrated into the general education classroom as soon as possible” (Bateman & Bateman, 2002).

Individualized Education Program (IEP): “Annually revised program for an exceptional student, detailing present achievement level, goals, and strategies, drawn up by teachers, parents, specialists, and (if possible), the student” (Woolfolk, 2007, p. 617).

Least Restrictive Environment (LRE): “To the maximum extent appropriate, children with disabilities . . . are to be educated with children who are nondisabled; and that special classes, separate schooling, or other removal of children from the regular educational environment occurs only if the nature or severity of the disability is such that the education in regular classes with the use of supplemental aids and services cannot be achieved satisfactorily” (IDEA, 2004).

Mainstreaming: A term used to describe the selective placement of special education students in one or more "regular" education classes rather than segregated

classrooms. “Teaching children with disabilities in regular classes for part or all of the school day” (Woolfolk, 2010, p. 558).

Modifications: Changes in the course materials or instruction that allow a student to learn at their own level (Parker, 2006).

No Child Left Behind (NCLB) of 2001: “Federal school reform legislation reauthorizing the Elementary and Secondary Education Act of 1965 and including increased school accountability for student learning, more choices for parents and students, greater flexibility for schools in the use of funds, and an emphasis on early reading intervention” (Friend, 2005, p. G-7).

Pervasive Development Disorder (PDD): Pervasive Developmental Disorder is a general term that refers to a spectrum of disorders that differ with respect to the number and type of symptoms or age of onset (APA, 2000, p. 69). Pervasive Developmental Disorders include Autistic Disorder, Rett’s Disorder, Childhood Disintegrative Disorder, Asperger’s Disorder, and Pervasive Developmental Disorder Not Otherwise Specified (APA, 2000, p. 14).

Preservice teacher: An individual who is enrolled as an education major and is completing college coursework to graduate and become a teacher.

Special Education: Individually planned, specialized, intensive, outcome-directed instruction. When practiced most effectively and ethically, special education is also characterized by the systematic use of research-based instructional methods, the application of which is guided by frequent measures of student performance (Heward, 2006).

Self-Efficacy: Self-efficacy is a person's belief that he or she has the capabilities to perform in a way that allows him or her to be successful at a task (Bandura, 1977).

Teacher: An individual who is licensed as an educator and currently teaching in a K-12 school.

Teacher's Attitudes Toward Inclusion: A teacher's thoughts or feelings towards working with students who have disabilities within the regular education classroom (Wood, 2007).

Teacher Efficacy: "The teacher's belief in his or her capabilities to organize and execute courses of action required to successfully accomplishing a specific teaching task in a particular context" (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 233).

Limitations

1. Preservice teachers were chosen based upon their enrollment in teacher education programs within the Midwestern region of the United States. This sample of preservice teachers may not truly represent attitudes and efficacy beliefs of all preservice teachers.

2. The sample was not randomly selected; therefore it may contain sampling error and bias.

3. The demographic makeup of these preservice teachers might differ from other areas of the nation.

4. Data collected for the study may be biased due to the use of self-reports. Preservice teachers may rate themselves more favorably.

5. Preservice teachers' area of study may affect the results. Preservice teachers with a special education background likely have more knowledge regarding inclusionary

practices for students with disabilities than do preservice teachers without a special education background.

6. The ORI was revised from its original version. These revisions may be different from published data, limiting comparison.

Delimitations

1. This study was delimited to preservice teachers predominately from the Midwestern region of the United States.

2. This study was delimited to preservice teachers who responded and completed the survey.

Assumptions

1. Preservice teachers will respond honestly and accurately to the questionnaire.

2. Preservice teachers are representative of teacher preparation programs.

3. Preservice teachers who received the questionnaire were actually the person who completed it.

Summary

This quantitative study focused on preservice teachers' attitudes towards inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings. In addition, the relationships between preservice teachers' attitudes and efficacy beliefs toward inclusion of students with ASD were explored. Finally, special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy were examined to identify their relationship to preservice teachers' attitudes toward inclusion of students with ASD.

Organization of the Study

This study is organized into five chapters. The first chapter introduces the prevalence rates of ASD, defines preservice and teacher attitudes toward inclusion of students with ASD, defines preservice and teacher efficacy beliefs about their ability to educate students with ASD in an inclusive setting, and outlines the variables influencing preservice and teacher attitudes and efficacy beliefs toward inclusion of students with ASD. Chapter 2 focuses on preservice teachers' attitudes regarding inclusion of students with ASD and their efficacy beliefs about their ability to educate students with ASD in an inclusive setting. It also identifies variables that are related to preservice teachers' attitudes toward inclusion of students with ASD. Chapter 3 includes descriptions of the research design, participants of the study, instruments selected, procedures, hypotheses, data collection, and data analysis. Chapter 4 reviews the research results. Chapter 5 provides a summary, conclusions, and recommendations of this study.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This study focuses on preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings. Therefore, the literature focuses on studies that have investigated these topics. In addition, studies that identify variables that are related to preservice teachers' attitudes and efficacy beliefs toward inclusion of students with disabilities were investigated. If the studies that have been done do not include these variables or answer this question, then studies concerning teachers were explored due to their progression from preservice teachers. In order to set the context for this study, additional areas were reviewed.

Prevalence of Autism Spectrum Disorders

For decades, ASD were believed to be rare; 1 in 2,500 children were diagnosed with ASD during the 1950s. However, prevalence rates for children identified with ASD continue to increase. In 2000, 1 in 150 children was identified as having an ASD. In 2004, 1 in 125 children was identified as having an ASD. In 2006, 1 in 110 children was identified as having an ASD. In 2012, 1 in 88 children was identified with ASD. Currently, 1 in 68 children is identified as having an ASD (CDC, 2014). The Individuals with Disabilities Education Act (IDEA) did not recognize ASD as a special education

category until 1990. Over 5,000 students were identified as having ASD during the first year of IDEAs implementation (Daily, 2005). As of 2012, 419,262 individuals receive special education services under the category of ASD in public schools (CDC, 2012). General education teachers have become responsible for educating students with ASD in their classrooms. Inclusion of students with ASD demands that teachers are properly trained, prepared, and willing to make inclusion successful. This makes it necessary to identify preservice teachers' attitudes and efficacy beliefs toward inclusion of students with ASD.

Inclusion of Students With Special Needs

In order to understand the attitudes of preservice teachers toward inclusion of students with ASD, one needs to consider the history and development of the rules and delivery system surrounding education of students with disabilities. Historically, society has segregated children with special needs. During the middle of the 19th century, segregation sparked the formation of institutions for educating and training individuals with disabilities (Gargiulo, 2006). Individuals within these institutions rarely received any form of education; thus, they became extremely isolated (Gargiulo, 2006).

Segregation also occurred within the formal education system. Special education classes began to appear within public schools. Special education classes were often self-contained classrooms and deemed viable alternatives to instructing children with disabilities. These special education classrooms often included students of multiple grade levels. This remained the norm for the next 50 years (Friend, 2005). Since these arrangements were outside the general education classroom, it is reasonable to believe that general education teachers were not yet affected.

General education teachers became affected by inclusion when changes occurred in educational legal rulings. The *Brown v. Board of Education* ruling (1954) required equal education for all students regardless of race. Despite being rooted in race, educators questioned whether separate classrooms provided an appropriate education for students with disabilities (LaNear & Frattura, 2007). Prior to the enactment of *Brown v. Board of Education*, state laws allowed school districts the right to refuse enrollment for students believed to be uneducable (LaNear & Frattura, 2007). While *Brown v. Board of Education* indicates separate is not equal, many schools continued to serve students in separate classrooms, mirroring the trend of segregation within society.

In 1975, the Education for All Handicapped Children Act was passed. It combined all previous legislation regarding disabilities. This law required public schools to ensure that all children, regardless of disability, be entitled to a free and appropriate public education (FAPE) within the Least Restrictive Environment (LRE) (Sands, Kozleski, & French, 2000). General education teachers were largely affected by this law, which outlined the right of students with disabilities to be placed in public classrooms. Thus, the term 'inclusion' was introduced into the field of education in 1986 (Friend, 2005).

Two terms have been commonly discussed within inclusionary education: inclusion and full inclusion.

Inclusion implies that students will be taught outside the regular education classroom only when all available methods have been tried and failed to meet their needs. If a student is pulled out of the general education classroom for instruction in another placement, the intent is for the pullout to be temporary and for the student to be reintegrated into the general education classroom as soon as possible. (Bateman & Bateman, 2002, para. 6)

Proponents of inclusion believe students with disabilities will learn best through

the collaboration between the special and general education teachers using a continuum of special education services (Fuchs & Fuchs, 1998). Additionally, students who are instructed by special education teachers outside the general education classroom should be taught skills required for integration into the classroom (Fuchs & Fuchs, 1998). On the contrary, proponents of full inclusion believe students with disabilities should be placed in the general education classroom at all times (Fuchs & Fuchs, 1998). This belief stems from the idea that if special education placements are available, then general education teachers will use this as a “dumping ground” (Fuchs & Fuchs, 1998).

Inclusion has implications for general education teachers. General education teachers are required to provide support for students when there is evidence of learning difficulties. Inclusion strategies are implemented at the general education level to encourage student success prior to making a referral for special education. Thus, general education teachers are expected to teach a broad range of students within the classroom, and to be successful even without the knowledge base. The increase in identification of students with ASD occurred so quickly that many teachers had entered the teaching field prior to receiving additional preparation coursework. Teacher education programs are responsible for preparing teachers to educate all students, regardless of disability. However, the drastic increase in identification of students with ASD has made it difficult to ensure all teachers are properly trained.

Preservice Teachers’ Attitudes Toward Inclusion

Teacher attitudes are related to the success or failure of inclusion of students with disabilities (Alghazo et al., 2003; Martin & Kudláček, 2010; Romi & Leyser, 2006). Due to the progression of preservice teachers to teachers, it is important to examine preservice

teachers' attitudes toward inclusion of students with ASD. Currently, there are two studies pertaining to preservice teachers' attitudes toward inclusion of students with ASD (Barned et al., 2011; Park et al., 2010).

Both studies reported positive attitudes among preservice teachers toward inclusion of students with ASD. Park et al.'s (2010) study measured attitudes using a modified version of the Autism Attitude Scale for Teachers (AASST) which was developed in 1981. The Cronbach's alpha reliability was deemed reliable ($\alpha = .87$) for the total AASST scale. The study included 131 preservice teachers (81 females, 50 males). Preservice teachers had positive attitudes toward inclusion of students with ASD, but indicated several areas of concern. For example, preservice teachers agreed with the following statements: "Typically developing children and children with autism should be taught in separate schools," "If I had the choice, I would teach in a school in which there were no children with autism," "Teachers not specifically trained in special education should not be expected to deal with a child with autism," and "It's unfair to ask teachers to accept children with autism into their school" (Park et al., 2010, p. 110). Agreement with these statements seems to illustrate less than positive attitudes toward inclusion of students with ASD. Further, it seems to highlight preservice teachers' lack of training (thus efficacy beliefs) toward inclusion of students with ASD.

Barned et al.'s (2011) study measured preservice teachers' attitudes toward inclusion of students with ASD using the Autism Inclusion Questionnaire (AIQ), a much more recent survey tool. However, the authors did not check the reliability for their sample. Rather, they used the developer's reliability and deemed it acceptable ($\alpha = .86$). Barned et al.'s findings show a majority of preservice teachers (93.3%) believed children

with ASD should be included within the general education classroom. However, preservice teachers expressed concerns and apprehension toward inclusion of *all* students with ASD. Over half (67.7%) of the preservice teachers believed a special school placement would be best for students with ASD (Barned et al., 2011). Further, 53.3% of the preservice teachers believed special education teachers should be responsible for teaching students with ASD (Barned et al., 2011). These beliefs appear to stem from the student's severity of ASD as 86.7% of preservice teachers considered this a factor for inclusion (Barned et al., 2011).

A high percentage of preservice teachers (93.3%) had misconceptions about the etiology of ASD (Barned et al., 2011). Although not specifically stated, this high percentage of ASD misconceptions illustrates a lack of preparation for inclusion. The study contained a limited sample of preservice teachers from Georgia ($N = 15$), all of whom were female. This small female sample of preservice teachers makes it difficult to generalize results. Both studies report positive attitudes toward inclusion of students with ASD; however, they highlight preservice teacher concerns toward the actual implementation of inclusionary practices.

Due to the limited literature available for preservice teachers' attitudes toward inclusion of students with ASD, preservice teacher studies regarding attitudes toward inclusion of students with disabilities were reviewed. These studies show variability across preservice teachers' attitudes toward inclusion. Studies reported negative attitudes (Alghazo et al., 2003; Shadreck, 2012; Sharma, Forlin, Loreman, & Earle, 2006; Sharma et al., 2009), neutral attitudes (Garriott et al., 2003), and positive attitudes of preservice teachers toward inclusion of students with disabilities (Ahsan et al., 2012; Gao & Mager,

2011; Kim, 2011; Martin & Kudláček, 2010; Mayhew, 1994; Romi & Leyser, 2006).

First, studies which reported negative attitudes of preservice teachers were reviewed, followed by studies showing neutral attitudes and positive attitudes toward inclusion. Negative attitudes toward inclusion of preservice teachers were reported in Alghazo et al.'s (2003) study of Arab preservice teachers. Further, preservice teachers' attitudes did not increase following experience working with students with disabilities. Several areas of concern with this study will be discussed. First, the authors used an Arabic translation of the Attitudes Towards Disabled Persons (ATDP) scale without using proper methods of validation. The translated ATDP scale was reviewed by five members of the English department; no criterion for their review was included. Second, the reliability coefficient for the ATDP was $\alpha = .61$ (Alghazo et al., 2003). Cronbach's coefficient scores $< .70$ can indicate an unreliable scale (Field, 2009). These weaknesses highlight the need for further research.

Sharma et al. (2009) also reported negative attitudes among preservice teachers toward inclusion of students with disabilities. The Attitudes Toward Inclusive Education Scale (ATIES) was used to measure attitudes of 478 preservice teachers in India. Preservice teachers 'somewhat disagreed' with statements that were supportive of inclusion for students with disabilities ($M = 3.07$ out of 5). However, it is unknown what these items were because the scale was not included. Further, 96% of preservice teachers lacked inclusionary training (Sharma et al., 2009), which may partially explain their negative attitudes. Additionally, preservice teachers' attitudes differed by student disability. Preservice teachers were supportive of students who needed academic modifications but not of those who were disruptive or required behavioral

accommodations. Attitudinal differences by disability type should be further explored.

Shadreck (2012) also reported negative attitudes toward inclusion of students with disabilities in a small Zimbabwe preservice teacher population ($N = 97$). Ironically, 90% of these preservice teachers responded favorably to the question, “Do children with severe disabilities benefit academically from inclusion” (Shadreck, 2012, p. 229). Further, 97% of preservice teachers said they would not take a job if it required teaching in an inclusive classroom (Shadreck, 2012). This discrepancy seems to suggest that preservice teachers understand the importance and benefits of inclusion but do not want these students in their classroom. The hesitation toward inclusion could be due to their reported lack of adequate preparation for inclusionary practices.

More neutral attitudes were reported in Garriott et al.’s (2003) study. Over half of preservice teachers believed students with disabilities should receive their education within the general education classroom (55%), while 45% of preservice teachers believed the special education classroom was the best placement (Garriott et al., 2003). A self-developed scale was used to measure preservice teachers’ attitudes; no validity or reliability information was provided. Further, a small sample of preservice teachers participated within the study ($N = 239$), limiting generalization. Additional research would be beneficial using scales with documented reliability and validity along with a larger population of preservice teachers for generalization purposes.

Positive attitudes were reported for preservice teachers toward inclusion in several studies (Ahsan et al., 2012; Gao & Mager, 2011; Kim, 2011; Martin & Kudláček, 2010; Mayhew, 1994; Romi & Leyser, 2006). Bangladesh preservice teachers had moderately positive attitudes as reported by Ahsan et al. (2012). However, a review of these findings

noted several concerns. The total Sentiments, Attitudes, and Concerns regarding Inclusive Education (SACIE) score was not used to calculate attitudes toward inclusion due to a low reliability (not reported). Rather, two subscales of the SACIE scale were used to determine preservice teachers' attitudes toward inclusion of students with disabilities: Concerns ($\alpha = .63$) and Attitudes ($\alpha = .60$). These subscales have low reliability according to Field's (2009) guideline of $>.7$ and could indicate an unreliable measure. Regardless, the authors calculated preservice teachers' attitudes from a combination of the Concerns and Attitudes subscales ($M = 2.81$) and deemed scores closer to 3 as agreeing with inclusion (Ahsan et al., 2012). Preservice teachers' level of training was the strongest contributor to attitudes toward inclusion. Preservice teachers with a high level of perceived efficacy for teaching had more positive attitudes toward inclusion. There are two concerns with this study: the reliability of the SACIE scale and use of two subscales to measure preservice teachers' attitudes. This indicates the need for further research.

Preservice teachers had positive attitudes toward inclusion of students with disabilities in Kim's (2011) study. The Teachers' Attitudes Toward Inclusion Scale was used to measure attitudes of 110 New York preservice teachers. The scale had a Cronbach's alpha of $\alpha = .905$, a much higher reliability than Ahsan et al.'s (2012) study. Interestingly, attitudinal differences were reported based upon the preservice teachers' level of training. Preservice teachers seeking dual certification in general and special education had significantly more positive attitudes ($M = 62.0$) than preservice teachers without dual certification ($M = 57.0$) (Kim, 2011). Thus, further research is necessary to

focus on preservice teachers' level of training and its relationship to preservice teachers' attitudes toward inclusion.

Gao and Mager (2011) analyzed preservice teachers' attitudes following progression through their teacher university training program. The training program included special education coursework with a minimum of seven field placements. Preservice teachers ($N = 216$) were surveyed using the Attitudes Toward Inclusive Education Scale (ATIES); no reliability or validity information was provided. Preservice teachers reported overall positive attitudes toward inclusion of students with disabilities, but attitudinal differences were evident based upon the student's type of disability. Preservice teachers were most positive about inclusion of students with social disabilities and less positive about inclusion of students with behavioral disorders. The authors attributed preservice teachers' positive attitudes to the effectiveness of their teacher preparation program. This seems like a broad leap to a conclusion since there was no control group.

Positive attitudes were reported for preservice teachers in Utah (Mayhew, 1994). A three-part survey using adapted items drawn from several attitude measures was used to measure preservice teachers' attitudes. Adaptations included changing some of the scales from a 5-point to 6-point scale (Mayhew, 1994). The author stated this change "should not significantly alter the reliability coefficients" (Mayhew, 1994, p. 60). However, reliability was not examined within this study so it is not known whether this statement held true. The scale items were presented to several colleagues who reported it had good face validity (Mayhew, 1994). There is no indication of how many colleagues reviewed the adapted scale or what criterion was used. Similar to Gao and Mager's

(2011) study, preservice teachers with special education coursework had more positive attitudes toward inclusion than those without special education coursework (Mayhew, 1994). While preservice teachers' positive attitudes are promising, the lack of reliability and validity information makes it difficult to determine if the results are replicable.

Australian preservice teachers had positive attitudes toward inclusion of students with disabilities (Martin & Kudláček, 2010). The study included 230 preservice teacher physical education teachers. The authors used the Attitude Toward Teaching Individuals with Physical Disabilities in Physical Education–Revised (ATIPDPE-R) to measure preservice teachers' attitudes and cited the use of correlations, regressions, and ANOVAs to verify construct validity; however, no results were included. Overall, preservice teachers reported positive attitudes toward inclusion; however, preservice teachers had concerns regarding their personal competence (Martin & Kudláček, 2010). This sample of Australian preservice teacher physical education teachers might not represent all preservice teachers; further research is necessary.

Romi and Leyser (2006) surveyed 1,155 Israeli preservice teachers regarding their attitudes toward inclusion of students with disabilities. The Opinions Relative to Integration of Students with Disabilities (ORI) scale was used to measure preservice teachers' attitudes. The authors completed a factor analysis of the ORI items in an attempt to validate the scale; however, no information was reported for their factor analysis findings. Romi and Leyser (2006) merely stated, "The factor analysis for this sample yielded a somewhat different factor structure, and it was decided to use the four factors reported by the scale developers" (p. 90). This decision enabled them to make comparisons with prior studies; but was contrary to their factor analysis findings. Rather

than using the total ORI score to measure attitudes, Romi and Leyser (2006) chose to use ORI Factor I. Due to Romi and Leyser's (2006) discrepant factor analysis findings, it is unknown if Factor I of the ORI was the best measure of preservice teachers' attitudes. Regardless, preservice teachers reported positive attitudes toward inclusion; yet expressed concerns about managing behavior problems (Romi & Leyser, 2006). Essentially, preservice teachers believed in the benefits of inclusion but did not feel prepared for inclusion of these students.

Overall, preservice teacher studies demonstrate several areas of concern. First, several studies used translated, adapted, and/or lower reliability scales to measure preservice teachers' attitudes toward inclusion of students with disabilities (Alghazo et al., 2003; Garriott et al., 2003; Mayhew, 1994). This makes it difficult to determine the replication of results. Second, several studies had small sample sizes; some focusing on specific groups of preservice teachers (Ahsan et al., 2012; Gao & Mager, 2011; Garriott et al., 2003; Kim, 2011; Martin & Kudláček, 2010; Shadreck, 2012). Despite these weaknesses, one theme emerged across these studies: Preservice teachers believe they lack the training and preparation required for inclusion. Further, coursework appears to be a variable which influences preservice teachers' attitudes toward inclusion. Variables influencing preservice teachers' attitudes toward inclusion will be discussed below.

Variables Related to Preservice Teachers' Attitudes Toward Inclusion

Preservice teacher studies have largely focused on variables related to attitudes toward inclusion of students with disabilities. These variables can be explained through Bandura's (1999) social cognitive theory and include: action through behavioral factors,

internal-personal factors, and environmental events. Action is operationalized through teacher experience working with students with disabilities. Internal-personal factors are operationalized through teacher gender and teacher efficacy. Finally, environmental events are operationalized through coursework and the students' type of disability.

Action Through Behavioral Factors: Preservice Teacher Experience

Teacher experience is operationalized through Bandura's (1999) action through behavioral factors. Teacher experience influences preservice teachers' attitudes toward inclusion of students with disabilities; as preservice teachers gain experience, their attitudes toward inclusion of students with disabilities become more positive (Forlin et al., 2009; Hodge & Jansma, 1999; Kowalski & Rizzo, 1996). The best predictor of preservice teachers' favorable attitudes toward inclusion is experience working with students with disabilities (Kowalski & Rizzo, 1996). Preservice teachers ($N = 133$) majoring in special education were surveyed using The Physical Educators' Attitude Toward Teaching Individuals with Disabilities (PEATID-III). Reliability for the total PEATID-III was deemed acceptable ($\alpha = 0.94$) (Kowalski & Rizzo, 1996). Similar to Kowalski and Rizzo's (1996) study, Hodge and Jansma (1999) focused on physical education preservice teachers and reported positive attitudes toward inclusion. Preservice teachers completed an adapted physical education (APE) course with practicum experience working with students with disabilities. Preservice teachers were placed in one of two groups (experimental or comparison) and surveyed at 1-, 10-, and 15- week intervals (Hodge & Jansma, 1999). The PEATID-III was deemed to have adequate reliability ($\alpha = .88$) and was used to measure 292 preservice teachers' attitudes toward inclusion. Preservice teachers' attitudes toward inclusion improved through APE class

attendance and time spent at practicum sites (Hodge & Jansma, 1999). Although preservice teachers' attitudes improved, they were not statistically significant. Both studies limited their samples to physical education preservice teachers, thus results may not hold true for all preservice teachers.

Forlin et al. (2009) reported positive attitudes among 603 preservice teachers across Australia, Canada, Hong Kong, and Singapore who had experience working with students with disabilities. The Attitudes Towards Inclusive Education scale (ATIES) was used to measure preservice teachers' attitudes. The authors reported adequate reliability and validity for the ATIES; however, no specific information was provided. Thus, it is unknown whether or not this statement held true. Further, preservice teachers' experience was measured through a single Yes/No survey question. This Yes/No question does not provide information as to whether there is a specific level of experience required to increase teacher attitudes toward inclusion. The study reported a relationship between preservice teachers' attitudes toward inclusion and experience. However, the authors did not include reliability or validity information. Additionally, a single Yes/No survey item was used to measure experience. Further research is necessary.

Further research by Forlin and Chambers (2011) found differing results. Prior experience working with students with disabilities was not an influencing factor for 67 preservice teachers' attitudes toward inclusion. Preservice teachers were surveyed at pre-test and post-test stages of a 39-hour diversity unit. The unit was designed to prepare preservice teachers for inclusion of students with disabilities. Preservice teachers' attitudes were calculated through the Attitudes subtest of The Sentiments, Attitudes and Concerns about Inclusive Education (SACIE) scale. No rationale was given for the use

of a subscale over the total SACIE scale. Regardless, reliability for the Attitudes subscale for the pretest was $\alpha = .894$ while the post-test was $\alpha = .720$; both deemed acceptable (Forlin & Chambers, 2011). Completion of a 39-hour diversity unit did not result in improvement of preservice teachers' attitudes toward inclusion. Further, prior experience working with students with disabilities made no difference in their attitudes toward inclusion.

Hastings and Oakford (2003) did not find significant differences for preservice teachers' attitudes toward inclusion of students with intellectual, emotional and/or behavioral problems based upon their level of experience (Hastings & Oakford, 2003). Preservice teachers' attitudes were measured using an author-developed survey, The Impact of Inclusion Questionnaire (IIQ). Reliability for the IIQ was deemed acceptable ($\alpha = .92$) (Hastings & Oakford, 2003). Overall, teacher experience was not an important factor for predicting preservice teachers' attitudes toward inclusion of students with intellectual, emotional, and/or behavioral problems (Hastings & Oakford, 2003). However, the student's type of disability was an important factor. Preservice teachers were more negative about inclusion of students with emotional and/or behavioral problems than those with intellectual disabilities.

In summary, the studies contained several weaknesses. First, several studies were limited to small sample sizes (Forlin & Chambers, 2011; Hastings & Oakford, 2003; Kowalski & Rizzo, 1996) and narrow populations of preservice teachers (Hodge & Jansma, 1999). Second, one study based teacher experience upon a single Yes/No question which does not give an indication of how much teaching experience is necessary to positively influence preservice teachers' attitudes toward inclusion (Forlin et al.,

2009). The limitations of these studies highlight the need for further research.

Internal-Personal Factors

Preservice Teachers' Gender

Teacher gender is another variable related to preservice teachers' attitudes toward inclusion of students with ASD (Park et al., 2010) and disabilities (El-Ashry, 2009; Garriott et al., 2003; Park et al., 2010; Romi & Leyser, 2006). Teacher gender is operationalized under Bandura's (1999) action through internal-personal factors within this study. Typically, female preservice teachers have more positive attitudes toward inclusion of students with ASD and disabilities than did males (Garriott et al., 2003; Park et al., 2010; Romi & Leyser, 2006).

In regard to teacher gender, Park et al. (2010) specifically looked at preservice teachers' attitudes toward inclusion of students with ASD. Female preservice teachers had more positive attitudes toward inclusion of students with ASD ($M = 4.57$) than did male preservice teachers ($M = 4.06$). Females believed students with ASD should be included in general education classrooms. The Autism Attitude Scale for Teachers (AAST), developed in 1981, was used to measure attitudes. The authors found the scale to be a reliable measurement of attitudes toward inclusion of students with autism ($\alpha = .87$). However, the age of the scale and small sample size highlight the need for further research.

Romi and Leyser (2006) surveyed a large sample of preservice teachers ($N = 1155$) and found females had more positive attitudes toward inclusion of students with disabilities than did males across all four subscales (Romi & Leyser, 2006). Further, females were significantly less concerned about the behavior problems of students with

disabilities than were males. As stated earlier, results from Romi and Leyser (2006) may not be replicable due to the disregard for their own factor analysis findings. Romi and Leyser (2006) chose to use Antonak and Larrivee's (1995) four-factor structure instead of their own findings, making it difficult to replicate results.

Gender differences were also evident in Garriott et al.'s (2003) study. Garriott et al. (2003) reported more positive attitudes among females toward inclusion of students with disabilities than among males. Sixty percent of females believed students with disabilities should be taught in the general education classroom while only 43% of males shared this belief. Preservice teacher attitudes were measured through an author-developed scale; no information was reported for its validity or reliability. Due to the small sample of preservice teachers ($N = 239$) and lack of validity and reliability information for their scale, it is difficult to determine if the results are replicable and generalizable.

Contrary to the above studies, El-Ashry (2009) reported more positive attitudes of male preservice teachers toward inclusion of students with disabilities than of females. The Attitudes Toward Inclusion questionnaire was used to measure 1,625 Egyptian preservice teachers' attitudes toward inclusion. The author compiled attitude items from existing scales (not identified), translated the items to Arabic, and named the scale: The Attitudes Toward Inclusion scale. El-Ashry (2009) completed reliability and validity measurements for his compiled scale through a pilot study. The reliability was deemed acceptable ($\alpha = .87$). The sample was limited to Egyptian preservice teachers, and thus may represent cultural differences and limit generalization.

No gender differences were reported within Huber's (2009) study of 150

preservice teachers. The Opinions Relative to the Inclusion of Students with Disabilities (ORI) was used to measure preservice teachers' attitudes toward inclusion of students with disabilities before and after student teaching experience. Reliability was checked using Cronbach's alpha for pre-test and post-test measures ($\alpha = .855$ and $.839$ respectively) and deemed acceptable. The small sample size may limit generalization to all preservice teachers.

These studies highlight several areas of concern. First, one study used a scale without properly establishing reliability (Garriott et al., 2003). Second, Romi and Leyser (2006) ignored their factor analysis findings, choosing to use Antonak and Larrivee's (1995) findings for comparison purposes. It is unknown whether this decision influenced their findings. Third, several studies had small and/or limited samples of preservice teachers (Garriott et al., 2003; Huber, 2009). Thus, it would be beneficial to complete additional research using larger sample sizes and more reliable instruments.

Preservice Teachers' Efficacy

There are currently no studies regarding preservice teachers' efficacy beliefs about their ability to educate students with ASD in inclusive settings. However, several studies report high teacher efficacy beliefs about their ability to educate students with ASD in inclusive settings (Busby et al., 2012; Morgan, 2013; Ruble et al., 2011; Siu & Ho, 2010; Taliaferro, 2010).

There are several studies which examine preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting. Overall, preservice teachers have high efficacy beliefs toward their ability to educate students with disabilities in inclusive settings (Ahsan et al., 2012; Gao & Mager, 2011; Kim, 2006;

Romi & Leyser, 2006). Specifically, preservice teachers in Bangladesh ($N = 1623$) had high efficacy beliefs ($M = 4.84$) about their ability to educate students with disabilities in inclusive settings as rated on the Teacher Efficacy for Inclusive Practices scale (TEIP) (Ahsan et al., 2012). The TEIP had a Cronbach's reliability of $\alpha = .85$ and was deemed acceptable. Three authors used the Teacher Efficacy Scale (TES) to measure preservice teachers' efficacy beliefs about their ability to educate students with disabilities in inclusive settings (Kim, 2006; Gao & Mager, 2011; Romi & Leyser, 2006).

Kim (2006) reported high efficacy beliefs among 110 preservice teachers at Syracuse University ($M = 3.6$) on the Gibson and Dembo scale about their ability to educate students with disabilities in an inclusive setting. Romi and Leyser (2006) used the Personal Teaching Efficacy (PTE) and General Teaching Efficacy (GTE) subtests of the TES to measure 1,155 Israeli preservice teachers' efficacy beliefs toward their ability to educate students with disabilities. Preservice teachers' efficacy beliefs were high for GTE ($M = 3.96$) and PTE ($M = 4.49$). Preservice teachers had higher personal teaching efficacy beliefs than general teaching efficacy about their ability to educate students with disabilities in an inclusive setting. Similarly, Gao and Mager (2011) used the GTE and PTE of the TES to measure 216 preservice teachers' efficacy beliefs toward their ability to educate students with disabilities. Overall, preservice teachers had high teacher efficacy beliefs about their ability to educate students with disabilities; mean scores were separated by gender: GTE Males ($M = 40.75$); Females ($M = 41.56$); PTE Males ($M = 46.75$); PTE Females ($M = 49.56$). Teachers appeared to have high efficacy beliefs about their ability to educate students with disabilities in the general education classroom.

The relationship between preservice teachers' efficacy beliefs and attitudes toward inclusion of students with disabilities

Teacher efficacy is operationalized under Bandura's (1999) internal-personal factors within the social cognitive theory. Teacher efficacy beliefs are related to preservice teachers' attitudes toward inclusion of students with disabilities (Ahsan et al., 2012; Gao & Mager, 2011; Romi & Leyser, 2006). Ahsan et al. (2012) reported a relationship between efficacy beliefs and attitudes toward inclusion of students with disabilities in a sample of 1,623 Bangladesh preservice teachers. The Teacher Efficacy for Inclusive Practice (TEIP) scale was used to measure preservice teachers' efficacy beliefs about their ability to include students with disabilities into an inclusive setting; while The Sentiments, Attitudes, and Concerns regarding Inclusive Education (SACIE) scale was used to measure preservice teachers' attitudes toward inclusion of students with disabilities. Reliability for the TEIP ($\alpha = .85$) was deemed acceptable (Ahsan et al., 2012). A reliability analysis of the total SACIE score was deemed unreliable; however, an alpha coefficient was not reported. The authors chose to use the Attitude subscale of the SACIE to measure preservice teachers' attitudes toward inclusion due to the unreliability of the Total SACIE score. Reliability for the Attitudes subscale was $\alpha = .60$ (Ahsan et al., 2012). The reliability for the Attitude subscale is lower than Field's (2009) recommended $> .70$ reliability, possibly indicating an unreliable scale. Regardless, Ahsan et al. (2012) used the Attitude subscale to compare preservice teachers' attitudes and efficacy beliefs. A significant positive correlation was reported ($r = .196, p = 0.01$) (Ahsan et al., 2012). Teacher efficacy beliefs were able to predict 12% of the variance in preservice teachers' attitudes toward inclusion of students with disabilities. Additional

research should be completed using a more reliable scale and a more diverse sample of preservice teachers, as the study was limited to preservice teachers from Bangladesh. Further, it is unknown if the Attitudes subscale of the SACIE is the best measure of preservice teachers' attitudes toward inclusion.

A relationship was also reported for teacher efficacy beliefs and attitudes toward inclusion of students with disabilities for a sample of Israeli preservice teachers (Romi & Leyser, 2006). The authors used a Hebrew version of four scales: the Teacher Efficacy Scale (TES), the ORI, and two additional unnamed scales used to measure teacher efficacy. The TES measured two factors: Personal Teaching Efficacy (PTE) and General Teaching Efficacy (GTE). Cronbach's reliability for the PTE was .76 while the GTE was .64. The first unnamed scale was comprised of seven items focused on student social relations (TES) and had a reliability of $\alpha = .65$. The second unnamed scale contained three items focused on efficacy for teaching low-achieving students (TEL) and had a reliability of $\alpha = .60$. Overall, reliabilities for the TES, unnamed scales, and ORI are low (ORI Factor I = .73, ORI Factor II = .69, ORI Factor III = .47, ORI Factor IV = .57). Despite these low reliabilities, the scales were administered to preservice teachers. Correlational findings were able to predict 4% of the total variance in attitudes toward inclusion of students with disabilities suggesting a weak relationship among the factors on the attitude and efficacy scales (Romi & Leyser, 2006).

Similar findings were reported in Gao and Mager's (2011) study. A relationship was reported for preservice teachers' attitudes and efficacy beliefs (Gao & Mager, 2011). The Attitudes Toward Inclusive Education Scale (ATIES) and its four subscales (Physical, Academic, Behavioral, and Social) were used to measure preservice teachers'

attitudes. The Teacher Efficacy Scale (TES) and its two subscales (GTE and PTE) were used to measure preservice teacher efficacy. The ATIES and TES factors were significantly correlated. The ATIES and PTE correlations ranged from .180 to .298 while the ATIES and GTE correlations ranged from .236 to .398 (Gao & Mager, 2011). GTE appeared to be a more reliable predictor of preservice teachers' attitudes than PTE. This study included a small sample size ($N = 216$) of predominately White females, which may limit generalization to all preservice teachers.

Relationship between preservice teachers' efficacy beliefs and teacher training

Several authors have suggested a link between teacher efficacy and preservice teacher training (Knoblauch & Woolfolk Hoy, 2008; Walls, 2007). Specifically, preservice teachers with training and experience have higher efficacy beliefs than those without (Walls, 2007). For example, preservice teachers who completed half or more of their teacher education program reported higher levels of efficacy than those at the beginning of their program (Walls, 2007). An adapted version of the Teacher Efficacy for the Inclusion of Young Children with Disabilities (TEIYD) was used to measure preservice teachers' efficacy beliefs. Adaptation included changing the phrase "children with learning disabilities" to "young children with disabilities" (Walls, 2007). Validity and reliability for the TEIYD were checked after making the adaptations and deemed acceptable (all scales $> .927$). The study included a small sample of preservice teachers ($N = 257$) which may limit generalizations to all preservice teachers.

A similar pattern is evident in Knoblauch and Woolfolk Hoy's (2008) study. Preservice teachers' efficacy beliefs increased following supervised teaching experiences

as measured on a pre- ($M = 6.79$) and posttest ($M = 7.35$) of the TSES short form.

Reliability for the short form of the TSES was $\alpha = .92$ and deemed acceptable (Knoblauch & Woolfolk Hoy, 2008). This study included a small sample of teachers ($N = 102$). Both studies show increased efficacy beliefs following teaching experience through training programs. However, both studies included a small sample of preservice teachers limiting generalization.

Changes in preservice teachers' efficacy beliefs

Findings suggest preservice teachers' efficacy beliefs about their ability to teach decreases upon entering the teaching field (Clark, 2009; Soodak & Podell, 1997; Woolfolk Hoy & Burke Spero, 2005). Soodak and Podell (1997) reported high efficacy beliefs among preservice teachers during fieldwork and student teaching about their ability to educate students; however, efficacy levels significantly decreased during their first year of teaching (Soodak & Podell, 1997). The Teacher Efficacy Scale (TES) was used to measure efficacy beliefs about their ability to educate students and was deemed acceptable ($\alpha = .70$) (Soodak & Podell, 1997). The decrease in preservice teacher efficacy was attributed to 'inflated' efficacy beliefs. Soodak and Podell (1997) supported their hypothesis through data indicating teacher efficacy levels never return to their preservice teacher levels.

Woolfolk Hoy and Burke Spero (2005) also reported a decrease in preservice teacher efficacy beliefs in their ability to educate students upon entering the teaching field. Teacher efficacy was measured at three intervals: the beginning of teacher training, the end of teacher training, and after the first year of teaching. Three efficacy measures

were used: Gibson and Dembo's short form, Bandura Teacher Self Efficacy Form, and the OSU scale (later renamed the TSES). Reliabilities for each scale were deemed acceptable (range .68 to .97). The study contained a small sample of teachers; 53 began the study and 29 completed all three intervals (Woolfolk Hoy & Burke Spero, 2005). The small sample of preservice teachers due to the large dropout rate may limit generalizations.

Clark (2009) reported similar results; teacher efficacy beliefs about their ability to educate students' decreases from preservice teacher level through the first year of teaching. Preservice teachers were surveyed during teacher preparation coursework and after their first year of employment (Clark, 2009). Two constructed scales were used to measure teacher efficacy: The Utah Preservice Teacher Efficacy Scale and the Utah Inservice Teacher Efficacy Scale. The instruments were constructed from previous teacher efficacy research; however, these instruments were not identified. Reliabilities for the constructed scales and subscales were deemed acceptable (range $\alpha = .81$ to .97). Five-hundred and forty-three preservice teachers began the study; however, 136 of these participants completed the study. Preservice teachers reported feeling "well prepared" whereas teachers felt "less than well prepared" (Clark, 2009). Despite the large dropout rate, Clark (2009) was able to deduce that the decreases in efficacy beliefs were largely due to exposure to issues that they were unaware of as preservice teachers (Clark, 2009).

Contrary to the above findings, Moore-Hayes (2008) failed to find decreased efficacy beliefs in the ability to educate students among teachers compared to preservice teachers. The researcher surveyed 66 preservice teacher and 96 beginning teachers in Nova Scotia Canada regarding their teacher efficacy beliefs; this was not a longitudinal

study. A modified TSES was used to measure teacher efficacy; however no reliability was reported. There were no reported differences between teacher and preservice teacher efficacy beliefs toward inclusion of students with disabilities. The mean score for both preservice teacher and teachers' efficacy toward teaching in an inclusive classroom was 4.3 (on a 9-point Likert scale). The study included a small sample of teachers and preservice teachers from Nova Scotia, possibly limiting generalization.

Preservice teachers' efficacy beliefs toward inclusion of students with specific disabilities

Several studies have developed efficacy belief scales to measure their ability to educate students with specific types of student disability (Atilas et al., 2012; Block et al., 2013; Hartmann, 2012). Atilas et al. (2012) adapted the TSES to measure preservice teachers' efficacy beliefs about their ability to educate students with developmental delays and/or disabilities in inclusive settings. Reliability and validity were deemed appropriate for the adapted scale total and its three factors (all $\geq \alpha = .93$). Preservice teachers with direct experience working with students with developmental delays and/or disabilities had higher efficacy beliefs. The study included a small sample ($N = 165$) of preservice teachers, all female, which may not be representative of all preservice teachers.

Block et al. (2013) focused on measuring preservice teacher physical education teachers' efficacy about their ability to educate students with intellectual disabilities, physical disabilities, and/or visual impairments in inclusive settings. Block et al. (2013) surveyed 486 preservice teachers to help validate the Self-Efficacy Scale for Physical Education Teacher Education Majors toward Children with Disabilities (SE-PETE-D)

scale. The SE-PETE-D included three scales, each followed by a vignette outlining a student with an intellectual disability, a physical disability, or a visual impairment. Preservice teachers completed a set of questions following the vignette. Confirmatory and exploratory factor analyses were completed for the SES-PETE-D. The confirmatory factor analysis and content and construct validity were reported to support the scale as a measure of teacher efficacy for students with intellectual disabilities, physical disabilities, and visual impairments. Reliabilities for each scale were deemed acceptable (Intellectual disabilities = .86, Physical Disabilities = .90, Visual Impairments = .92) (Block et al., 2013).

The development of efficacy scales to measure different disability areas suggests the instability of efficacy across disability areas. Thus, it is important to determine preservice teachers' efficacy beliefs about their ability to educate students with ASD in inclusive settings.

Environmental Factors

Preservice Teacher Coursework

Coursework is operationalized under Bandura's (1999) environmental factors. Preservice teachers' attitudes towards inclusion of students with disabilities are related to teacher training coursework (El-Ashry, 2009; Kim, 2011; Mayhew, 1994; Powers, 1992; Shade & Stewart, 2001; Shadreck, 2012; Shier, 2002; Swain et al., 2012). Park et al. (2010) specifically focused on preservice teachers' attitudes toward inclusion of students with ASD following coursework. Preservice teachers majoring in special education had more positive attitudes ($M = 4.40$) than did general education preservice teachers ($M = 3.93$). The additional coursework required of special education majors influences their

attitudes toward inclusion. Park et al.'s (2010) sample was small ($N = 131$) which may limit generalization.

The following studies focus on preservice teachers' attitudes toward inclusion of students with disabilities. Powers (1992) found significant differences in preservice teachers' attitudes toward inclusion upon completion of special education coursework. Preservice teachers were surveyed before and after a 16-week special education course ($N = 186$). The name of the attitude scale was not included. The author merely reports that a pre-posttest instrument was designed to measure attitude toward inclusion. Results show significant increases in preservice teachers' attitudes from the beginning ($M = 2.65$) to end of special education coursework ($M = 2.83$) (Powers, 1992). The author reported that although significant, these results are not 'sufficient' to prepare preservice teachers for inclusion. Preservice teachers reported feeling unsure about inclusion and believed additional training was necessary to be successful (Powers, 1992).

Preservice teachers have more positive attitudes after completing special and general education coursework (Kim, 2011). Further, preservice teachers who enrolled in a dual-degree program (general and special education) had more positive attitudes than did those in either special or general education programs (Kim, 2011). The Attitudes Toward Inclusion Scale was used to measure preservice teachers' attitudes. Reliability for the scale was deemed acceptable ($\alpha = .905$) (Kim, 2011). The study included a small sample of preservice teachers from New York ($N = 110$), which may limit generalization.

Preservice teachers' attitudes toward inclusion in Shier's (2002) study improved following coursework. Although these students didn't complete a dual-degree program as outlined in Kim's (2011) study, they did have attitudinal improvement following a

single course. Shier (2002) developed a scale to measure 110 preservice teachers' attitudes toward inclusion of students with disabilities; no reliability or validity information was reported. Shier (2002) concluded that preservice teachers had positive attitudes toward inclusion based upon their responses to specific scale items; a scale total was not used. Specifically, over 65% of preservice teachers agreed with the statement, "I feel prepared to successfully implement and practice inclusion in the future" (Shier, 2002, p. 27). Shier (2002) deduced preservice teachers had positive attitudes toward inclusion based upon this question; however, there was no indication of whether additional items were included to measure attitudes. As a result, it is difficult to ascertain which items were included in the measurement of attitudes.

Shade and Stewart (2001) reported positive changes in preservice teachers' attitudes toward inclusion following completion of a special education course. One hundred and twenty-two preservice teachers enrolled in 'Overview of Special Education' participated within the study (Shade & Stewart, 2001). Preservice teachers completed a pre-test and post-test survey regarding their attitudes toward inclusion. Results indicate statistically significant total test gains for both special and general education majors following completion of the course (Shade & Stewart, 2001). It is difficult to say if these results are replicable due to the lack of information regarding the reliability and validity of the scale.

Very similar to Powers's (1992) study, Swain et al. (2012) reported significant attitude improvement among preservice teachers following completion of a special education course. However, preservice teachers continued to feel insufficiently trained.

Ten years after Powers's (1992) study, preservice teachers continue to advocate for additional inclusionary training.

Student's Type of Disability

Student type of disability is operationalized under Bandura's (1999) environmental factors within this study. Student disability type is related to preservice teachers' attitudes toward inclusion (Barned et al., 2011; El-Ashry, 2009; Forlin & Chambers, 2011; Gao & Mager, 2011; Hastings & Oakford, 2003; Park et al., 2010; Sharma et al., 2009). Preservice teachers have positive attitudes toward inclusion of students with ASD (Barned et al., 2011; Park et al., 2010). Further, the majority of preservice teachers (93.3%) believe children with ASD should be included in the general education classroom (Barned et al., 2011). However, preservice teachers did not believe *all* students with ASD should be included. Further, preservice teachers believed special education teachers should be responsible for teaching students with ASD (Barned et al., 2011). These sentiments were apparent in Park et al.'s (2010) study; preservice teachers' believed teachers trained in special education should deal with students with ASD. Both studies reported positive attitudes among preservice teachers toward inclusion of students with ASD; however, individual item responses pointed to more negative attitudes.

Forlin and Chambers (2011) reported attitudinal differences among preservice teachers. Preservice teachers were more positive toward inclusion of students with mild disabilities and less positive toward inclusion of physically aggressive students. Seven items were chosen from the Sentiments, Attitudes and Concerns about Inclusive Education (SACIE) scale to specifically measure attitudes toward inclusion. Sixty-seven preservice teachers completed the SACIE before and after a course designed to prepare

them for inclusive teaching. The study included a small number of preservice teachers, making it difficult to generalize results.

Preservice teachers had negative attitudes toward inclusion of students with behavioral and/or emotional disorders. Preservice teachers in the United Kingdom had more positive attitudes toward inclusion of students with intellectual disabilities than for students with emotional and behavioral problems (Hastings & Oakford, 2003). Further, preservice teachers believed that students with emotional and/or behavioral problems were likely to have a negative impact upon other students in the general education classroom. As reported earlier, this study included a small sample ($N = 93$) of preservice teachers, limiting generalization. Similarly, Sharma et al. (2009) reported negative attitudes among Indian preservice teachers toward inclusion of students with disruptive behaviors. Preservice teachers had more positive attitudes toward inclusion of students who required academic modifications, social modifications, physical modifications, and who had vision and/or hearing difficulties (Sharma et al., 2009). As reported previously, preservice teachers within Sharma et al.'s (2009) study reported a lack of training for inclusionary practices. This may account for the attitudinal differences among preservice teachers. The authors suggested that further investigation of attitudinal differences based upon student type of disability may help improve teacher training programs. El-Ashry (2009) reported negative attitudes of Egyptian preservice teachers toward inclusion of students with emotional and/or behavioral disorders. As reported earlier, the authors used a developed scale which was translated into Arabic. The study included only Egyptian preservice teachers from one college program training program, which may limit generalization of findings to all preservice teachers. Similarly, Gao and Mager (2011)

reported negative attitudes among preservice teachers toward students with behavioral disabilities. The Attitudes Toward Inclusive Education Scale (ATIES) was used to measure preservice teachers' attitudes toward inclusion of students with disabilities (Gao & Mager, 2011). The authors did not verify the reliability and validity of the ATIES scale within their sample of preservice teachers. Rather, they reported reliability and validity for the ATIES from Wilczenski's (1995) study.

These studies show attitudinal differences for preservice teachers based upon the students' type of disability. Overall, preservice teachers do not have positive attitudes toward inclusion of students with behavioral and/or emotional disabilities. As such, these studies are limited and do not explore all disability areas. There is a need to study preservice teachers' attitudes toward inclusion of students with ASD due to its increasing diagnostic rate as well as the implication for inclusion within the general education classroom. It is also pertinent to identify whether the variables coursework, teacher experience, teacher gender, and teacher efficacy are related to preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings. Studying these variables can help education programs concentrate on enhancing preservice teachers' attitudes towards inclusion of students with ASD through proper educational training. In order to know what to emphasize and/or change in teacher training programs, it is important to explore current requirements for teacher training programs.

Training Requirements of Education Programs

Teacher preparation commonly occurs through traditional or alternative pathways (Zirkle, Fletcher, Sander, & Briggs, 2010). The traditional education path includes

earning a bachelor's or master's degree in a teacher education program. The alternative pathway includes condensed coursework on an abbreviated time line where a teaching certification/license is granted based upon previous experiences in a subject area (Zirkle et al., 2010). Both pathways require an individual to pass a certification test. Traditional education pathways tend to be the most common route for licensure and will be the focus in the review of training requirements.

As of data collected in 1994, only six states required coursework related to inclusionary practices for regular education teacher certification (Katsiyannis & Conderman, 1995). While this information is dated, it demonstrates the lack of importance placed upon teacher training for inclusionary practices. As of 2001, approximately 10 states still did not require a course in special education. While this shows an improvement, current inclusionary law requires placement of students with disabilities into the general education classroom and teachers need to be prepared. Teachers' attitudes act to facilitate or inhibit successful inclusion for students with disabilities (Alghazo et al., 2003; Carroll et al., 2003; Martin & Kudláček, 2010; Romi & Leyser, 2006).

Although more recent studies have not been completed regarding teacher preparation programs, The National Council for Accreditation of Teacher Education (NCATE) makes certain that education programs produce competent, qualified teachers. NCATE is the accrediting body for teacher preparation programs and recognized by the U.S. Department of Education. An investigation of NCATE (2008) standards demonstrates the following guidelines to prepare preservice teachers:

Professional education programs prepare candidates who: have the content knowledge needed to teach students; have the pedagogical and professional

knowledge needed to teach effectively; operationalize the belief that all students can learn; demonstrate fairness in educational settings by meeting the educational needs of all students in a caring, non-discriminatory, and equitable manner; understand the impact of discrimination based on race, class, gender, disability/exceptionality, sexual orientation, and language on students and their learning; and can apply their knowledge, skills, and professional dispositions in a manner that facilitates student learning. (p. 7)

Current standards for preparing preservice teachers are largely based on outcome data (NCATE, 2008). As a result, it is not specifically stated how much coursework needs to be taught in the area of special education. Rather, the notion is expressed that preservice teachers need to be prepared to meet the educational needs of the students within their classrooms and show an understanding of differences due to disability (NCATE, 2008).

NCATE's standards correlate with InTASC's *Model Core Teaching Standards*. InTASC's *Model Core Teaching Standards: A Resource for State Dialogue* (2010) outlined common standards for teaching knowledge and skills to preservice teachers. InTASC recognized the growing diversity of the students within schools and acknowledged the need for knowledge and skills to address diversity (InTASC, 2010). Teacher education programs are expected to use InTASC standards for preparation and licensing purposes (InTASC, 2010).

Special education standards are more structured and outlined by the Council for Exceptional Children (CEC). The CEC (2009) requires all entry-level special educators to "possess appropriate pedagogical knowledge and skills; hold at least a bachelor's degree from an accredited institution, and master appropriate core academic subject matter content" (CEC, 2009, p. 8). Special educators are required to complete their first

year of teaching under a mentor with experience and who can provide support (CEC, 2009).

Teachers' Attitudes Toward Inclusion

A search of literature produced four studies regarding teachers' attitudes toward inclusion of students with ASD (McGregor & Campbell, 2001; Park & Chitiyo, 2011; Segall, 2008; Wilkerson, 2012). These studies show that, overall, teachers have positive attitudes toward inclusion of students with ASD. However, teachers voiced concerns regarding their level of training as well as the appropriateness of inclusion for all students with ASD.

McGregor and Campbell (2001) reported positive attitudes among teachers toward inclusion of students with autism. The authors grouped teachers using the following criterion: level of experience working with students with autism (experienced or inexperienced), and identification as a special or general education teacher. The authors developed two questionnaires to measure teachers' attitudes toward inclusion of students with autism. One questionnaire was used to measure special education teachers' attitudes and the second to measure general education teachers' attitudes. The questionnaires were pilot tested; no information was given regarding these results.

Special education teachers believed students with autism should be integrated (47%) while 27% of inexperienced general education teachers shared this belief (McGregor & Campbell, 2001). Further, 78% of special education teachers believed inclusion for students with autism depends on the attitude of the teacher. Only 33% of experienced general education teachers and 42% of inexperienced general education teachers held this same belief (McGregor & Campbell, 2001). Overall, experienced

teachers had more positive attitudes toward inclusion of students with autism than did inexperienced teachers (McGregor & Campbell, 2001).

Segall (2008) reported similar findings. Teachers had positive attitudes toward inclusion of students with ASD but were concerned about the appropriateness for all students. Attitudes were measured using the Autism Inclusion Questionnaire (AIQ), a scale developed by the author. One of the AIQ sections, Opinions about Inclusive Education, was used to measure teachers' attitudes toward inclusion. No specific information was given as to what these items were or their content. Overall, teachers had positive attitudes toward inclusion of students with ASD; however, they reported full inclusion was not appropriate for *all* students with ASD (Segall, 2008). Findings also demonstrated teacher experience working with students with ASD predicted the use of inclusionary practices. However, teachers reported a lack of knowledge and awareness of inclusionary practices for students with ASD (Segall, 2008). A review of the data tables within Segall's (2008) study raised concerns. The tables reveal inconsistent teacher responses. Specifically, teachers reported using inclusionary practices that they had not heard of: 59.6% reported hearing of Edible Reinforcement whereas 100% reported using this strategy. It is questionable as to whether or not any conclusions can be made between inclusionary strategies and attitudes toward inclusion of students with ASD since it is inconceivable that teachers would use strategies of which they have not heard.

Teachers reported positive attitudes toward inclusion of students with autism in Park and Chitiyo's (2011) study. The Autism Attitude Scale for Teachers (AASST) was used to measure attitudes toward inclusion. Differences in teachers' attitudes were evident based upon demographic variables. For example, female teachers ($M = 4.14$, SD

= 0.45) had more positive attitudes toward inclusion than did males ($M = 3.71$, $SD = 0.69$). Additionally, teachers who received autism training had more positive attitudes ($M = 4.49$, $SD = 0.44$) than did teachers who lacked training ($M = 4.04$, $SD = 0.46$). The demographic differences warrant further investigation.

Wilkerson's (2012) findings were similar to those above; teachers had positive attitudes toward inclusion of students with autism; however, teachers raised concerns. The Teacher Attitudes Toward Inclusion Scale (TATIS) was used to measure teachers' attitudes toward inclusion of students with autism. The TATIS consisted of 14 items rated on a 7-point Likert scale. Construct validity was confirmed through principal component analysis. Reliability was assessed through the use of Cronbach's alpha (.887) and deemed acceptable (Wilkerson, 2012). Teachers believed inclusion increased classroom management problems and decreased time spent with students without disabilities. Teachers also believed separate classrooms should be available for students with autism. Further, teachers (83.4%) believed that responsibility for teaching students with autism should be shared between special and general education teachers (Wilkerson, 2012). Overall, 68% of the teachers were supportive of inclusion for students with autism. With this being said, 49.8% of teachers found it necessary to remove a student with autism from the general education classroom to meet the student's needs (Wilkerson, 2012). Teacher attitudes were related to the student's level of autism. Teachers were least positive about inclusion of students with severe autism than for students with mild autism. Further, teachers who believed they had adequate training had more positive attitudes toward inclusion than teachers who reported a lack of training.

In summary, the evidence available shows that teachers have positive attitudes

toward inclusion of students with ASD. However, teachers feel unprepared.

Approximately 50% of teachers agreed with full inclusion of students with autism in McGregor and Campbell's (2001) study. However, teachers were concerned about the adverse impact of inclusion on non-disabled students. Segall (2008) reported that teachers believed students with ASD should be included within the general education classroom (78.7%). However, when asked if all students with ASD should be included, approximately 28% agreed (Segall, 2008). Teacher attitudes were identified as the most important factor for inclusion, with special education experience being less important (Segall, 2008). Further, demographic differences were found for teachers' attitudes toward inclusion of students with ASD (Park & Chitiyo, 2011; Wilkerson, 2012). Teachers of students with severe levels of autism had the least positive attitudes toward inclusion (Park & Chitiyo, 2011) and teachers with autism training had more positive attitudes toward inclusion than did teachers without autism training (Wilkerson, 2012).

Action Through Behavioral Factors: Teacher Experience

Teacher experience is operationalized under Bandura's (1999) behavioral factors within this study. Teacher experience is a variable related to teachers' attitudes toward inclusion of students with ASD and disabilities (Avramidis et al., 2000; Kalyva, Gojkovic, & Tsakiris, 2007; Van Reusen, Shoho, & Barker, 2001; Wilkerson, 2012). Teachers with experience working with students with disabilities have more positive attitudes toward inclusion than did teachers without experience (Avramidis et al., 2000). Specifically, teachers with several years of experience implementing inclusionary practices held more positive attitudes toward inclusion than did teachers who had yet to implement inclusionary practices. This study included a small sample of teachers ($N =$

81) from England and may limit generalizations to all teachers.

Similar to Avramidis et al. (2000), Van Reusen et al. (2001) reported teachers with experience using inclusionary practices had more positive attitudes than did teachers with minimal experience. Specifically, special education teachers had the most positive attitudes toward inclusion of students with disabilities. The authors used a constructed scale without reporting reliability or validity for a small sample of Texas teachers ($N = 125$). This may limit generalizability. Experience and coursework were found to be important influencing variables for teachers' attitudes toward inclusion in Kalyva et al.'s (2007) study. Special education teachers had more positive attitudes toward inclusion of students with disabilities than did general education teachers. The authors used the My Thinking About Inclusion Scale (MTAI) to measure attitudes; reliability was deemed acceptable ($\alpha = .91$). This study included a small sample of teachers from Serbia ($N = 72$) and may limit generalizations to all preservice teachers.

Contrary to the above studies, several authors reported positive attitudes among teachers with minimal experience (Center & Ward, 1987; Gal, Schreur, & Engel-Yeger, 2010). Center and Ward (1987) surveyed 2,219 general and 332 special education teachers in New South Wales. Teachers with the least amount of teaching experience (defined as 0-2 years) had more positive attitudes toward inclusion of students with disabilities than did teachers with more than 2 years of teaching experience. The attitude scale was not identified; reliability and validity information was not provided. Thus it is difficult to make a determination about the accuracy of these findings. Gal et al. (2010) also reported more positive attitudes among less experienced teachers than those with more experience. Experienced teachers noted several behavioral traits common among

students with disabilities: give up easily, are generally unsuccessful, and are unfriendly. Gal et al. (2010) used a Hebrew translation of the Attitudes Toward Disabled Persons Scale (ATDP-A) developed in 1962. Reliability for the ATDP-A was reported from previous studies; no analysis was completed for their sample of 53 female teachers. Further research should be completed using an updated scale and a sample of males and females.

Finally, Wilkerson (2012) focused on the attitudes of 636 teachers toward inclusion of students with autism. Similar to Center and Ward (1987) and Gal et al. (2010), teachers with more experience had more negative attitudes toward inclusion of students with autism than did teachers with less experience. Specifically, teachers with 16 to 21 years of teaching experience had more negative attitudes than did teachers with 1 to 5 years of experience. Further, teachers between the ages of 20 to 29 had more positive attitudes than did teachers between the ages of 40 to 59 (Wilkerson, 2012). The authors hypothesized that younger, less experienced teachers have more tolerance than do older experienced teachers toward inclusion of students with disabilities.

In summary, experience is related to teachers' attitudes toward inclusion. Experience did not improve teachers' attitudes toward inclusion of students with ASD (Wilkerson, 2012) and disabilities (Center & Ward, 1987, Gal et al., 2010) in several studies. However, several authors did report more positive attitudes among teachers following their experience working with students with disabilities (Avramidis et al., 2000; Kalyva et al., 2007; Van Reusen et al., 2001). Further, several of the studies did not report reliabilities for the scales used (Gal et al., 2010; Van Reusen et al., 2001), one used a nearly 30-year-old scale (Center & Ward, 1987), and several studies had limited

samples of teachers (Avramidis et al., 2000; Gal et al., 2010; Kalyva et al., 2007; Van Reusen et al., 2001). These discrepancies and study weaknesses highlight the need for further research.

Internal-Personal Factors

Teacher Gender

Teacher gender is operationalized under Bandura's (1999) internal-personal factors within this study. Teacher gender is related to teachers' attitudes toward inclusion of students with ASD (Park & Chitiyo, 2011; Wilkerson, 2012) and disabilities (Jobe et al., 1996). Thus far, research findings have been varied for teachers' attitudes toward inclusion across genders. Park and Chitiyo (2011) reported more positive attitudes of female teachers ($M = 4.15$, $SD = 0.45$) than for male teachers ($M = 3.71$, $SD = 0.69$) toward inclusion of students with autism. Wilkerson (2012) did not find gender differences for teachers' attitudes toward inclusion of students with autism. Wilkerson's (2012) sample of teachers was much larger ($N = 636$) than Park and Chitiyo's (2011) ($N = 127$); both primarily included female teachers. Wilkerson's (2012) sample was comprised of 85% females and Park and Chitiyo's (2011) sample included 90% female participants. These weaknesses highlight the need for additional research.

Finally, Jobe et al. (1996) reported more positive attitudes among male teachers toward students with disabilities. Within his sample, males attitudes toward inclusion of students with disabilities ($M = 79.40$) were significantly higher than were females' ($M = 73.64$). Further, male teachers had more positive attitudes toward their perceived ability to teach students with disabilities ($M = 7.60$) than did females ($M = 5.56$). The varied findings regarding the influence of gender upon teachers' attitudes toward inclusion of

students with disabilities warrant further investigation.

Teacher Efficacy

Teachers have high efficacy beliefs about their ability to educate students with ASD in an inclusive setting (Busby et al., 2012; Morgan, 2013; Ruble et al., 2011; Siu & Ho, 2010; Taliaferro, 2010). Busby et al. (2012) surveyed 31 teachers from Alabama. Teachers reported high efficacy beliefs about their ability to educate students with ASD in the general education classroom; however, teachers believed they needed additional training to be effective. Thus, the authors recommended additional coursework be added for the preservice teacher to focus on inclusion of students with ASD. Further, courses should include fieldwork and opportunities for teachers to observe students with ASD.

Taliaferro (2010) and Morgan (2013) studied efficacy beliefs of physical education teachers about their ability to educate students with ASD in inclusive settings. Taliaferro (2010) surveyed 236 physical education teachers' efficacy beliefs through the Physical Educators' Self-Efficacy Toward Including Students with Disabilities–Autism (PESEISD-A). Overall, efficacy beliefs about their ability to educate students with ASD in an inclusive setting were high ($M = 7.83$) (Taliaferro, 2010). Morgan (2013) surveyed 151 physical education teachers using the Self-Efficacy Theory (SET) scale. Physical education teachers were efficacious toward inclusion as a general concept ($M = 5.5$) and had higher efficacy beliefs about their ability to educate students with ASD in an inclusive setting ($M = 6.66$). The authors did not hypothesize why physical education teachers would have higher efficacy beliefs about their ability to educate students with ASD than students with disabilities.

High efficacy beliefs were reported among teachers about their ability to educate

students with ASD within Siu and Ho's (2010) study. Efficacy beliefs of 115 teachers were measured using the TES for two different treatment approaches: Applied Behavior Analysis (ABA) and the TEACCH method. Teachers using the ABA approach had a PTE score of 68.97 and a mean GTE score of 54.51. Teachers using the TEACCH method had a mean PTE score of 60.24 and a mean GTE score of 55.84. Thus, teachers who used the ABA approach have a higher sense of personal teaching efficacy than do those using the TEACCH method. While the ABA method resulted in more efficacious teachers toward inclusion of students with ASD, the TEACCH method also resulted in high efficacy beliefs. The authors concluded that using some treatment approach resulted in high efficacy beliefs toward inclusion of students with ASD than using no treatment approach.

Colleague and administrative support was found to be an important influence of teachers' efficacy beliefs about their ability to educate students with ASD in inclusive settings (Ruble et al., 2011). Thirty-five teachers of students with ASD from a Midwestern and Southern state participated in the study. The teachers completed the Teacher Interpersonal Self-Efficacy Scale (TISES) to rate efficacy beliefs for classroom management, obtaining colleagues' and the principal's support. Teachers felt most efficacious for inclusion of students with ASD when they had colleague support ($M = 5.39$) followed by administration support ($M = 5.18$) and lastly classroom management ($M = 4.56$).

High efficacy beliefs were reported for teachers regarding their ability to educate students with specific disability areas such as deaf-blindness and orthopedic impairment in inclusive settings (Hartmann, 2012; Holman, 2011). Hartmann (2012) surveyed 87

teachers to define a construct of teacher efficacy about their ability to educate students with deaf-blindness in inclusive settings. The goal was to examine the psychometric properties of the Teacher Efficacy in Deaf-blindness Education Scale (TEDE). Findings from the study suggest the TEDE could be further developed and used as a psychometrically sound instrument. The TEDE is a step toward measuring teachers' efficacy beliefs toward inclusion of students with deaf-blindness. Holman (2011) measured teachers' efficacy beliefs about their ability to educate students with orthopedic impairments in inclusive settings. Holman's (2011) study was limited to 83 physical education teachers from Montana. The Physical Educators' Self-Efficacy Toward Including Students with Disabilities–Orthopedic Impairment (PESEISD-OI) was used to measure efficacy beliefs. Physical education teachers had high efficacy beliefs about their ability to educate students with orthopedic impairments ($M = 77.37$) and the scale had strong reliability ($\alpha = .87$).

Relationship between teachers' efficacy and teacher training

Teacher efficacy is operationalized under Bandura's (1999) action through internal-personal factors within this study. Teachers' efficacy beliefs about their ability to educate students with disabilities in inclusive settings were increased following coursework (Brownell & Pajares, 1999; Henson, 2001). Brownell and Pajares (1999) theorized that strong preservice teacher preparation programs resulted in higher teacher efficacy. Further, it was hypothesized that teacher preparation coursework plays a critical role in the development of efficacy beliefs. It was recommended that teacher preparation programs redesign their programs to include more special education coursework to

increase teacher efficacy about their ability to educate students with disabilities in an inclusive setting (Brownell & Pajares, 1999).

Teacher efficacy beliefs about their ability to educate students with disabilities were also evident following Henson's (2001) yearlong research initiative. The Teacher Efficacy Scale (TES) was used as a pre-test and post-test to measure teacher efficacy beliefs. The program included a very small sample of teachers ($N = 8$) who attended formal and informal study meetings throughout the year. During meetings, teachers identified instructional challenges and behavior management issues. They also formulated databased methods to resolve these issues. The pre-test and post-test results show significant gains in General and Personal Teaching Efficacy (Henson, 2001). The authors attributed the change in efficacy to teachers' professional development. The study included a very small sample of teachers, which limits generalization to all teachers.

The relationship between teachers' attitudes and efficacy beliefs toward inclusion

Teacher efficacy beliefs about teachers' ability to educate students with disabilities in inclusive settings are related to teachers' attitudes toward inclusion of students with disabilities (Bender, Vail, & Scott, 1995; Savolainen, Engelbrecht, & Malinen, 2012; Weisel & Dror, 2006; Wood, 2007). Within the United States, Bender et al. (1995) and Wood (2007) reported a positive correlation between teachers' attitudes toward inclusion of students with disabilities and efficacy beliefs. Specifically, Bender et al.'s (1995) study reported a positive correlation ($r = .36$) between efficacy and teachers' attitudes toward inclusion. However, the explained variance was small (13%) and

warrants further investigation. A significant correlation was reported in Wood's (2007) study between teacher efficacy and attitudes toward inclusion of students with disabilities ($r = .25$). Thus, teachers with a high sense of efficacy have more positive attitudes toward inclusion of students with disabilities than those with a low sense of efficacy (Wood, 2007).

Internationally, two studies found a positive correlation for teachers' attitudes toward inclusion of students with disabilities and efficacy beliefs about teachers' ability to educate students with disabilities in inclusive settings (Savolainen et al., 2012; Weisel & Dror, 2006). Savolainen et al. (2012) reported a moderate correlation between teachers' attitudes toward inclusion of students with disabilities and self-efficacy beliefs among South African ($r = .420$) and Finnish teachers ($r = .455$). The Sentiments, Attitudes, and Concerns about Inclusive Education (SACIE) and The Teacher Efficacy for Inclusive Practices (TEIP) scales were translated to Afrikaans and Finnish within the study. Teachers' attitude toward inclusion of students with disabilities was the best predictor of teacher self-efficacy. Weisel and Dror (2006) also reported a significant correlation between teachers' attitudes toward inclusion of students with disabilities and efficacy beliefs among 139 teachers from Israel ($r = .67$) (Weisel & Dror, 2006).

Teacher Efficacy Toward Specific Disabilities

One study focused on teacher efficacy beliefs about teachers' ability to educate students with ASD in an inclusive setting (Morgan, 2013). Morgan (2013) reported high efficacy beliefs of 142 physical education teachers toward inclusion of students with ASD. An online self-efficacy survey developed by Taliaferro et al. (2011) was used to gather data. Cronbach's reliability analysis was completed for the modified survey and

deemed acceptable ($\alpha = .92$). Demographic items were included to measure teacher experience regarding inclusion of students with ASD. The majority of physical education teachers had completed one adapted physical education course as an undergraduate. Approximately half of the teachers surveyed believed they were adequately prepared for inclusion of students with ASD. Furthermore, experience, adapted physical education coursework, and perceptions of preparation for inclusion were found to be significant predictors of teacher behavior for inclusion of students with ASD. The study included a small sample of physical education teachers, which limits generalization to all teachers.

Several additional authors focused on improving teacher efficacy beliefs about their ability to educate students with ASD in the general classroom (Busby et al., 2012; Siu & Ho, 2011; Taliaferro, 2010). Siu and Ho (2010) examined two specific treatment orientations and their correlation with teachers' self-efficacy. Applied behavior analysis (ABA) and The Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) approaches were compared to determine which approach resulted in the most teacher commitment to inclusion of a student with ASD. The study included 114 teachers (38 used the ABA approach, 37 used the TEACCH approach, and 40 teachers served as the control group). The Autism Treatment Philosophy Questionnaire (ATPQ) was used to measure teachers' intervention approach in teaching children with ASD. The Teacher Efficacy Scale (TES) was used to measure teachers' efficacy beliefs. Both scales were translated into Chinese. Reliability of the adapted scales was not included. The authors indicated, "Validity and reliability of this modified version has not been established, the original version of the scale has demonstrated adequate discriminant and convergent validity" (Siu & Ho, 2010, p. 184).

Findings suggest teachers who use a treatment orientation (either ABA or TEACCH) had higher efficacy beliefs toward inclusion of students with ASD than those without a treatment orientation. Further, teachers who used the ABA approach had higher personal efficacy beliefs toward teaching students with ASD. This study had several weaknesses. First, the study included a small sample of teachers, which may limit generalization. Second, the scales used within the study were translated to Chinese without checking the reliability after these changes were implemented.

Taliaferro (2010) constructed the Physical Educators' Self-efficacy Toward Including Students with Disabilities–Autism (PESEISD-A) scale to measure self-efficacy of physical education teachers about their ability to educate students with ASD in inclusive settings. The author used Bandura's guidelines for self-efficacy theory in development of the PESEISD-A and included measurements of teachers' mastery experiences (ME), vicarious experiences (VE), social persuasion (SP), physiological states (PS), behaviors (BEH), and perceived challenges (PCH). Teachers were asked to report the amount of inclusionary courses completed within their undergraduate preparation. Approximately 88% had taken one adapted physical education course in their teacher preparation program. Fifty-five percent had taken at least one course in special education. Nearly 57% of physical education teachers had attended an autism workshop, yet 53% still did not feel prepared for inclusion. Multiple regression results indicated mastery experiences (ME), vicarious experiences (VE), social persuasion (SP), and physiological states (PS) were significant predictors of teacher self-efficacy. Furthermore, mastery experience was the best predictor of teacher self-efficacy beliefs toward inclusion of students with ASD.

Busby et al. (2012) took a different approach to measuring efficacy beliefs of teachers about their ability to educate students with ASD in inclusive classrooms. Busby et al. (2012) posed an open-ended question to 31 teachers enrolled in a graduate course: “What challenges can you expect when teaching children with autism?” (p. 31). The goal was to gather information to help develop and/or revise curriculum. The authors theorized teacher efficacy may be increased through training and coursework. Teachers’ responses revealed several challenges with inclusion of students with autism. These challenges included: a need for specific training and time to collaborate with other teachers, labor-intensive IEP procedures, a lack of knowledge, and potential behavior problems of students with autism. Teachers reported minimal or no training for teaching students with autism. Teachers suggested providing more training within teacher preparation programs for inclusion of students with autism. Teachers believed preparation programs should include additional coursework, field-based experiences, and access to current research strategies for inclusion of students with autism.

Several additional studies focused on teachers’ efficacy beliefs about their ability to educate students with specific disability categories in the general classroom. For example, Hartmann (2012) developed an efficacy scale to measure teachers’ ability to educate students with deaf-blindness in inclusive settings. The Teacher Efficacy in Deaf-blindness Education Scale (TEDE) was developed and used to survey 87 special education teachers in California. Reliability of the TEDE was deemed acceptable ($\alpha = .98$). The author reported moderately low to moderately high efficacy beliefs among teachers working with children who are deaf-blind. The author attributed the wide variation in efficacy scores to individual teacher confidence levels for the type of

teaching task. Hartmann (2012) concluded that even when teachers have the knowledge and skill to teach students with deaf-blindness, they may not be able to do so due to their confidence for the type of teaching task. This study was a pilot study for the development of the TEDE and therefore is limited. Further validation of the TEDE is necessary.

Finally, Jung, Cho, and Ambrosetti (2011) focused on efficacy beliefs of special, general, and secondary preservice teachers about their ability to educate students with disabilities in the general classroom. Although this study did not focus specifically on efficacy beliefs toward inclusion of students with ASD, ASD was one of the 12 reported disability areas within the study. Findings show special education preservice teachers rated themselves as having higher efficacy beliefs toward inclusion of students with disabilities. Further, special education teachers reported higher efficacy beliefs toward inclusion of students with autism. Specifically, special education teachers rated themselves as having more knowledge, skills, and ability to teach students with disabilities than did both general and secondary preservice teachers. The study used items from the Special Needs Confidence Scale which had a reported reliability of .95, which was deemed acceptable. The study included a small sample ($N = 287$) of teachers and may limit generalizations.

Environmental Factors

Coursework

Coursework is operationalized under Bandura's (1999) action through environmental events within this study. Coursework is related to teachers' attitude toward inclusion of students with disabilities (Avramidis et al., 2000). Specifically,

teachers with special education training had more positive attitudes toward inclusion of students with disabilities (Bender et al., 1995; Elhoweris & Alsheikh, 2006; Jobe et al., 1996; Van Reusen et al., 2001). Jobe et al. (1996) surveyed teachers from public schools in the United States regarding their attitudes toward inclusion of students with disabilities. One hundred and sixty-two teachers participated. Teachers with special education experience had more positive attitudes toward inclusion of students with disabilities. Further, in-service training for inclusion of students with disabilities was related to teachers' positive attitudes toward inclusion of students with disabilities. Van Reusen et al. (2001) focused on attitudes of 125 Texas high-school teachers toward inclusion of students with disabilities. An author-developed scale was used to measure attitudes toward inclusion; no information was given regarding the scale's reliability or validity. Findings suggest teachers with adequate to high special education training had more positive attitudes than did those without special education training.

Teachers want additional training for inclusion because many do not feel prepared to provide quality inclusive educational services for students with disabilities (Avramidis et al., 2000; Hammond & Ingalls, 2003; Kwapy, 2004). In Colorado, teachers are concerned with the inclusion of students with physical and verbal aggression (Kwapy, 2004). Further, teachers felt they needed additional training for inclusion to be effective for students with disabilities. A need for additional inclusionary training was also reported in Avramidis et al.'s (2000) study. Teachers had positive attitudes toward inclusion of students with disabilities. However, nearly 50% of the teachers believed they needed additional training (Avramidis et al., 2000). Hammond and Ingalls (2003) surveyed 343 teachers from the southwest United States regarding their attitudes toward

inclusion of students with disabilities. Teachers had negative attitudes toward inclusion and were not committed to the concept. Specifically, teachers did not believe they had sufficient training for providing inclusionary services for students with disabilities. Thus, it was recommended that teachers receive adequate training from their preservice teacher training programs prior to entrance into the teaching field. Interview findings from Betancourt-Smith (1994) further support these findings. Teachers reported a lack of training within their preservice teacher training programs to help meet the needs of students with disabilities and expressed a need for additional training either through in-services or workshops.

General education teachers are typically required to take one special education course, whereas special education teachers take multiple courses. Thus, general educators do not have the same knowledge base or experience as special education teachers. As a result, general education teachers often feel less confident in their ability for inclusion to be successful in the general education classroom (Buell, Hallam, & Gamel-McCormick, 1999; Brownell & Pajares, 1999). Case in point, 29.2% of general education teachers believed they had sufficient training to implement inclusionary practices for students with disabilities (Scruggs & Mastropieri, 1996). Similar findings were reported by the U.S. Department of Education (Buell et al., 1999); 78% of general education teachers believing they were unprepared to handle the individual needs of students with disabilities.

Student's Type of Disability

The student's type of disability is operationalized under Bandura's (1999) environmental events within this study. Teachers' attitudes toward inclusion of students

with disabilities are related to the student's type of disability (Center & Ward; 1987; Jobe et al., 1996; Kwapy, 2004). General education teachers were "not enthusiastic" about inclusion of students with behavior and/or emotional disabilities (Center & Ward, 1987). Further, teachers were not as willing to mainstream students who would require extra instructional or management skills on their part. Teachers' attitudes toward inclusion were largely dependent on the student's type of disability (Jobe et al., 1996). Specifically, teachers had more positive attitudes toward inclusion of students with physical disabilities than for students with cognitive, emotional, and/or behavioral disabilities (Jobe et al., 1996). Teachers believed students with behavior problems would be the most difficult to handle within the classroom (Kwapy, 2004). Furthermore, teachers believed inclusionary practices would increase their already overwhelming workload.

To summarize, special education law requires teachers to include students with disabilities into the general education classroom. The increase in identification of students with ASD will likely result in inclusion of these students into general education classrooms. Students with ASD are at risk for school failure simply due to the nature of their disability; therefore, teachers' attitudes and efficacy beliefs toward inclusion of students with ASD are areas of importance. It is necessary to gather more information regarding these variables to help prepare preservice teachers prior to their entrance into the field of teaching. It is hoped that this training will help preservice teachers successfully implement inclusionary practices.

Survey Instruments

Two survey instruments were used within the current study: an adapted version of

the Opinions Relative to the Integration of Students with Disabilities (ORI) and the Teachers' Sense of Efficacy Scale (TSES). A review of these studies will be discussed below.

The Opinions Relative to Integration of Students With Disabilities (ORI)

The Opinions Relative to the Integration of Students with Disabilities (ORI) is a revision of the Opinions Relative to Mainstreaming (ORM) scale developed by Larrivee and Cook (1979). The ORI reflects more contemporary language and includes an analysis of the ORI's multidimensional structure. Antonak and Larrivee (1995) completed a principle axis factor analysis of the ORI with orthogonal rotation. They set the criterion for acceptable factor loading at 0.37 (Antonak & Larrivee, 1995). The authors identified a four-factor solution for the ORI: Benefits of Integration (8 items), Integrated Classroom Management (10 items), Perceived Ability to Teach Students with Disabilities (3 items), and Special Versus Integrated General Education (4 items).

Since publication of the ORI, researchers have found varying factor structures for the ORI (Dupoux, Wolman, & Estrada, 2005; Jobe et al., 1996; Romi & Leyser, 2006). For example, Dupoux et al. (2005) reported a single ORI factor for a sample of elementary and secondary teachers in Haiti. Jobe et al. (1996) reported four ORI factors for a sample of American teachers. The ORI factors were identified using SPSS default settings and eigenvalues greater than one. Jobe et al.'s (1996) factor findings were most similar to Antonak and Larrivee (1995). Jobe et al.'s (1996) Factor I contained 92% of the same items, Factor II contained the same items but loaded in the opposite direction,

Factor III contained 88% of the same items, and Factor IV had 76% of the same items (Jobe et al., 1996).

Romi and Leyser (2006) used the ORI with a sample of Israeli preservice teachers. They completed a factor analysis of the ORI but did not report their findings due to a discrepancy between theirs and Antonak and Larrivee's (1995) four-factor findings. Romi and Leyser (2006) reported: "The factor analysis for this sample yielded a somewhat different factor structure, and it was decided to use the four factors reported by the scale developers" (p. 90). This approach was chosen in order to compare results from previous studies using four factors (Romi & Leyser, 2006). Several additional authors used the ORI to measure teachers' attitudes without verification of the factors for their sample populations (Dyer, 2003; Jung, 2007; Ryan, 2007). Rather, the ORI and its factors as outlined by Antonak and Larrivee (1995) were used.

Of importance, Costello and Osborne outlined best-practice procedures for exploratory factor analysis in 2005. They recommended use of principal axis factor analysis (PAF) with oblique rotation. Five or more items strongly loading on a factor ($\geq .5$) are necessary to be considered solid and stable. Further, factors with fewer than three items are considered weak and unstable (Costello & Osborne, 2005). The application of these 2005 best-practice principles for Antonak and Larrivee's (1995) factor analysis of the ORI highlights several differences. First, Antonak and Larrivee (1995) used orthogonal methods of rotation, which restricts the data and assigns them to a factor rather than letting them correlate with other items. Second, Antonak and Larrivee's (1995) ORI Factors III and IV did not have ≥ 5 items loading $\geq .5$ to be considered a solid and stable factor.

Teachers' Sense of Efficacy Scale (TSES)

The Teachers' Sense of Efficacy Scale (TSES) is derived from Bandura's teacher efficacy scale (an unpublished, undated measure) and Gibson and Dembo's (1984) TES scale. The TSES was extensively examined in three different studies during its development (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES includes a long (24 items) and short form (12 items) (Tschannen-Moran & Woolfolk Hoy, 2001). "Both the 24-item and 12-item forms were subjected to two separate factor analyses, one using the responses of preservice teachers ($N = 111$), and the other using the responses of teachers ($N = 255$)" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 799). The scree plot and eigenvalues greater than one were used to determine the number of TSES factors to retain. PAF results demonstrate a three-factor solution for teachers (Efficacy for Instructional Strategies, Efficacy for Classroom Management, and Efficacy for Student Engagement) and a one-factor solution for preservice teachers. Tschannen-Moran and Woolfolk-Hoy (2001) stated, "The factor structure for preservice teachers was less distinct, therefore it appeared that the best solution for preservice teachers was a single factor" (p. 799).

These TSES factor structure findings were supported by the research by Fives and Buehl (2010). Fives and Buehl's (2010) factor analysis of the 24-item TSES identified a three-factor solution for teachers and a one-factor solution for preservice teachers. PAF with varimax rotation was used for factor identification. Two factor-retention methods were used: Horn's parallel analysis and an examination of the scree plot were used (Fives & Buehl, 2010).

Referencing Costello and Osborne's (2005) best-practice procedures for

exploratory factor analysis, there were several differences for the TSES. First, Tschannen-Moran and Woolfolk Hoy (2001) used an orthogonal method of rotation (varimax). Second, they did not report the item criterion for factor loading. The three factors identified by Tschannen-Moran and Woolfolk Hoy (2001) were all deemed solid and stable with ≥ 5 items loading $>.5$. Tschannen-Moran and Woolfolk Hoy's (2001) one-factor TSES solution was also deemed solid and stable with all items loading $\geq .5$.

Summary

In summary, current education law requires inclusion of students with ASD into the general education classroom (IDEA, 1977, Section 504). Approximately 1 in 68 children is identified with ASD (CDC, 2014). Unfortunately, many teachers have not been trained to teach students with ASD prior to the influx in identification and implementation of inclusionary laws. It can be assumed that this drastic increase in identification and inclusion of students with ASD has resulted in a lack of knowledge and training among teachers. One of the most important predictors for successful inclusion of students with disabilities relates to the attitude of general education teachers (Alghazo et al., 2003; Carroll et al., 2003; Martin & Kudláček, 2010; Romi & Leyser, 2006).

Teachers and preservice teachers have positive attitudes toward inclusion of students with ASD (Barned et al., 2011; McGregor & Campbell, 2001; Park & Chitiyo, 2011; Park et al., 2010; Segall, 2008; Wilkerson, 2012); however, teachers feel ill-prepared to implement inclusion for students with ASD (Barned et al., 2011; McGregor & Campbell, 2001; Park et al., 2010; Wilkerson, 2012). If teachers feel unprepared and inefficacious for inclusion of students with ASD, inclusion likely will be unsuccessful.

CHAPTER 3

METHODOLOGY

Introduction

The present study was designed to investigate preservice teachers' attitudes towards inclusion of students with Autism Spectrum Disorders (ASD) and their efficacy beliefs about their ability to educate students with ASD in inclusive settings.

Relationships among teachers' attitudes toward inclusion of students with ASD, special education coursework, teacher experience with ASD, teacher gender, and teacher efficacy were explored. This chapter focuses on the methodology used within the study. The research design, population, instrumentation, reliability and validity of the instrument, procedure, and data collection and analysis procedures are discussed.

Research Design

This is a quantitative study, which used the survey research method and online surveys to gather data. An online survey was chosen as the most effective way to solicit responses from preservice teachers across the Midwestern region of the United States.

The advantages of using an online survey largely relate to time and cost. Online survey instruments are easy to implement and can potentially collect a large amount of data while eliminating the cost of paper and postage (Braithwaite, Emery, de Lusignan, & Sutton, 2003; Creative Research Systems, 2010). Online surveys can often stimulate a

higher response rate than mailed surveys due to their novelty (Creative Research Systems, 2010). It is also assumed that the anonymity of the online survey allows respondents to give more honest answers. Furthermore, using an online survey allows participants to receive items in a standardized format (Creative Research Systems, 2010). The online survey system also allows for electronic data transfer for analysis, eliminating human error often encountered when manually entering the data (Braithwaite et al., 2003).

On the other hand, there are some disadvantages to using an online survey. Some individuals may not have access to a computer, thus are unable to complete the survey. Furthermore, there are often variations in individuals' computer systems. These variations may result in formatting issues causing variations in the amount of time it takes to download the survey (Braithwaite et al., 2003). Another disadvantage is participation motivation. Participants may decide to quit in the middle of the questionnaire leaving unusable surveys (Creative Research Systems, 2010). Also, some people dislike unsolicited email and may simply delete the email. Additionally, participants may be motivated to take the survey multiple times and/or forward it to individuals outside the research sample. These advantages and disadvantages were taken into consideration when selecting the online survey method.

Population and Sample

The target population included preservice teachers enrolled in teacher education programs in the Midwestern region of the United States. Schools were located through *Peterson's Colleges in the Midwest* (2008). Two hundred and eighty-six schools with teacher training programs were chosen for the study. School administrators from the 286

schools were invited to participate in the study; 43 agreed. From these 43 participating schools, 1,028 preservice teachers completed the online survey. The sample primarily included preservice teachers from the Midwestern region of the United States; however, preservice teachers from Utah, Oklahoma, and Florida also completed the online survey. It is assumed that preservice teachers from the Midwestern region of the United States forwarded the online survey to additional preservice teachers.

Instruments

A combined scale was used in the study and contained: 25 items from an adapted version of the Opinions Relative to the Integration of Students with Disabilities Scale (ORI), 24 unmodified items from the Teachers' Sense of Efficacy Scale (TSES), 10 demographic items, 1 comment area for survey concerns, and 1 comment area for the Target gift card drawing (see Appendix C). The pilot study included one additional item: a question prompting students to identify unclear, offensive, or invasive items. Permission was obtained from the scale developers to use each instrument (see Appendix E).

Opinions Relative to Integration of Students With Disabilities (ORI)

The ORI was developed to measure teachers' attitudes concerning integration of students with disabilities (Antonak & Larrivee, 1995). The scale included 25 items; 12 were negatively worded and 13 were positively worded to prevent an acquiescent-response-style threat. The ORI items are rated on a 6-point Likert-type scale (+3 to -3) with +3 indicating *strongly agree* and -3 indicating *strongly disagree* (Antonak & Larrivee, 1995). The authors completed a factor analysis of the 25 ORI items with

orthogonal rotation; item criterion for factor loading was set at 0.37 (Antonak & Larrivee, 1995). A four-factor solution was chosen to represent their data and included: Factor I–Benefits of Integration (8 items), Factor II–Integrated Classroom Management (10 items), Factor III–Perceived Ability to Teach Students with Disabilities (3 items), and Factor IV–Special Versus Integrated General Education (4 items). The authors reported the ORI to be reliable ($\alpha = .83$) (Antonak & Larrivee, 1995).

Opinions Relative to Inclusion of Students With Autism Spectrum Disorders (ORI-ASD)

The ORI was adapted and served as part of the combined scale in this study. Wording of ORI was modified by changing the term ‘general disability’ to ‘Autism Spectrum Disorders.’ For example, the first ORI item states, “Most students with disabilities will make an adequate attempt to complete their assignments” (Antonak & Larrivee, 1995). The item was modified to state: “Most students with Autism Spectrum Disorders will make an adequate attempt to complete their assignments” (see Appendix C). Additionally, ORI item 15 was reworded to eliminate a double negative and became negatively phrased: “It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD” (see Appendix C). The adapted scale was renamed the Opinions Relative to the Inclusion of Students with Disabilities–Autism Spectrum Disorders (ORI-ASD) to distinguish it from the ORI. Further, the ORI-ASD items were rated on a 6-point Likert scale with 1 indicating *strongly disagree* and 6 indicating *strongly agree*. To be consistent with the 12 positively worded items, the 13 negatively worded items were reverse scored and included items: 2, 6, 8, 9, 11, 12, 14, 15, 18, 20, 23, and 24.

Parametric assumptions such as the normality of distribution, skewness, and kurtosis were checked; the ORI-ASD was analyzed as an interval scale. Previous studies also analyzed the ORI as an interval scale (Antonak & Larrivee, 1995; Dupoux, Hammond, Ingalls, & Wolman, 2006; Jobe et al., 1996; Romi & Leyser, 2006; Yellin et al., 2003). Frequencies for ORI-ASD items were examined, and the percentage of missing values ranged from .2 to .8 for total responses. Missing scores were replaced with mean scores. ORI-ASD mean scores and its factors were totaled in lieu of a total score. A factor analysis of the ORI-ASD was completed to identify factor structure and ensure internal consistency. Findings were compared to those reported in previous studies. Results of this factor analysis are reported in Chapter 4.

ORI Validity

To validate the ORI as an attitude measurement scale, the Scale of Attitudes toward Disabled Persons (SADP) was given concurrently (Antonak & Larrivee, 1995).

Analyses of the SADP in previous studies have shown satisfactory psychometric characteristics of the scale. Therefore, it is an appropriate comparison for the revised ORI. . . . Analyses of the relationship between the SADP scores and scores on other instruments measuring attitudes toward people with disabilities have provided evidence for the concurrent validity of the scale. (Antonak & Larrivee, 1995, pp. 142-143)

The SADP and ORI were administered to a sample of 376 preservice teachers (Antonak & Larrivee, 1995). Validity of the ORI was tested using hierarchical multiple-regression analysis. The first step included sociodemographic variables, the second step included experiential variables, and the third step included the SADP. “The best predictor of the attitude toward inclusion score was attitude toward people with disabilities, standardized coefficient = 0.66, $t(370) = 16.86$, $p < 0.01$ ” (Antonak &

Larrivee, 1995, p. 147). Thus, individuals with higher attitudes toward individuals with disabilities had more positive attitudes toward inclusion.

Additionally, the ORI-ASD was completed by 63 preservice teachers at Valparaíso University as part of a pilot study and 1,028 preservice teachers from the Midwest as part of the study. An exploratory factor analysis was completed on the ORI-ASD items using the responses from the sample of 1,028 preservice teachers to check construct validity. The results of the factor analysis will be discussed in Chapter 4.

ORI Reliability

Antonak and Larrivee (1995) deemed the reliability for the ORI to be acceptable ($\alpha = .83$). Additional reliability analyses of the ORI were comparable: Wood (2007) ($\alpha = .88$); Jobe et al. (1996) ($\alpha = .90$).

Due to the modification of the ORI, a pilot study was completed at Valparaíso University to check the reliability of the ORI-ASD. The ORI-ASD was completed by 63 preservice teachers. Results show a reliability of $\alpha = .83$ for the ORI-ASD which was deemed acceptable.

Teachers' Sense of Efficacy Scale (TSES)

The Teachers' Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Woolfolk Hoy (2001) served as part of the combined scale. The TSES was chosen due to its high reliability ratings and strong theoretical base. The scale is based on Bandura's teacher efficacy scale (an unpublished, undated measure) and Gibson and Dembo's (1984) TES scale (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES contains two forms: the Long Form containing 24 items and the Short Form containing

12 items (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES items were rated on a 9-point Likert scale where 1 indicates *Nothing or None at All* and 9 indicates *A Great Deal*.

Principal-axis factor analysis using varimax rotation was completed for the 24- and 12-item TSES. A three-factor solution was identified for teachers and named: Efficacy for Student Engagement (8 items), Efficacy for Instructional Strategies (8 items), and Efficacy for Classroom Management (8 items) (Tschannen-Moran & Woolfolk Hoy, 2001). A one-factor solution was identified for preservice teachers. The authors hypothesized that a one-factor solution seemed to be most appropriate because preservice teachers have not had the teaching responsibilities of teachers (Tschannen-Moran & Woolfolk Hoy, 2001).

Parametric assumptions such as the normality of distribution, skewness, and kurtosis were checked; the TSES was analyzed as an interval scale. Previous studies also analyzed the TSES as an interval scale (Fives & Buehl, 2010; Flood, 2007; Tschannen-Moran & Woolfolk Hoy, 2001). Frequencies for TSES items were examined and the percentage of missing values ranged from 2.6 to 3.9 for total responses. Missing scores were replaced with mean scores. TSES mean scores were totaled in lieu of a total score. A factor analysis of the TSES was completed to identify factor structure and ensure internal consistency. Findings were compared to those reported in previous studies. Results of this factor analysis are reported in Chapter 4.

TSES Validity

Tschannen-Moran and Woolfolk Hoy (2001) assessed construct validity by correlating the TSES with existing teacher efficacy measures (the Rand Measure, Gibson

and Dembo adaptation of the Teacher Efficacy Scale). The TSES was positively correlated to both the Rand Measure items ($r = 0.18$, and $r = 0.53$). The TSES was also positively correlated to personal teaching efficacy ($r = 0.64$) and general teaching efficacy ($r = 0.16$) of the Gibson and Dembo measure (Tschannen-Moran & Woolfolk Hoy, 2001). These results suggest reasonable validity of the TSES scale.

Discriminant validity was assessed for teacher efficacy through comparison results from a work alienation survey. The work alienation survey was hypothesized to correlate negatively with teacher efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). This hypothesis was supported as teacher efficacy was negatively correlated to work alienation ($r = -0.31$) (Tschannen-Moran & Woolfolk Hoy, 2001).

Additionally, 63 preservice teachers at Valparaiso University completed the TSES as part of a pilot study, and 1,028 preservice teachers from the Midwest as part of the study. An exploratory factor analysis was completed on the TSES items using the responses from the sample of 1,028 preservice teachers to check construct validity. The results of the factor analysis will be discussed further in Chapter 4.

TSES Reliability

The Teachers' Sense of Efficacy Scale (TSES) long form by Tschannen-Moran and Woolfolk Hoy (2001) has been deemed to have acceptable reliability ($\alpha = .94$). Additional reliability analyses of the TSES reported comparable reliabilities: Fives and Buehl (2010) reported a Cronbach's coefficient of .93 for practicing teachers and .95 for preservice teachers on the long form of the TSES. Students at Valparaiso University ($N = 63$) who participated within the pilot study completed the TSES. Results of the pilot study show a reliability of $\alpha = .926$, which was deemed acceptable.

Demographic Information

The combined survey instrument included 10 demographic items developed by the researcher. Demographic items measured the variables: age, gender, educational level, expected area of degree/licensure, special education background, experience with students with ASD, understanding of ASD, and understanding of teacher efficacy (see Appendix C). The variables found to be important based upon the review of literature are discussed.

Pilot Study

The combined scale was pilot tested at Valparaiso University to ensure methodological rigor. Approval for the pilot study was obtained from the Institutional Review Boards (IRB) at Andrews University and Valparaiso University (see Appendix G). Valparaiso University preservice teachers were invited to complete the online survey via email. A reminder email was sent 1 week after the initial email to encourage participation (Appendix B).

For purposes of the pilot study, the ORI-ASD was rated on a 7-point Likert scale, which ranged from 0 to 6. The 0 indicated an *I don't know* response; whereas 1 indicated *strongly disagree* and 6 indicated *strongly agree* (Appendix C). The ORI-ASD included the *I don't know* response as a means of determining if preservice teachers lacked background experience and/or knowledge regarding students with ASD. It was assumed that preservice teachers may not have background experience and/or knowledge regarding students with ASD due to their progress within their educational programs. Thus, preservice teachers may lack an opinion regarding inclusion of students with ASD due to this possible lack of experience. This information was meant to help identify and

address potential problems with ORI-ASD.

For purposes of the pilot study, the TSES was rated on a 10-point Likert scale, which ranged from 0 to 9. The 0 indicated an *I don't know* response; whereas 1 indicated *none at all* and 9 *a great deal* (Appendix C). The *I don't know* response was added to the pilot study because it was assumed that some of the preservice teachers may not have background experience and/or knowledge regarding their teacher efficacy based on their progress within their educational programs. Preservice teachers with a lack of experience may have difficulty identifying their teacher efficacy beliefs. This information was meant to help identify and address potential problems on the TSES scale.

Five additional items were added to the pilot study seeking survey feedback. Preservice teachers were asked to identify items they found confusing, unclear, invasive, and/or offensive (see Appendices B and C). Furthermore, items prompted preservice teachers to indicate whether they have a good understanding of ASD and teacher efficacy.

Focus groups were scheduled with preservice teachers at Valparaiso University to review items identified as unclear or confusing. The focus groups offered suggestions to the survey format. Survey modifications were made based upon this feedback. Modifications included the deletion of the *I don't know* response on the ORI-ASD and TSES, an increase in the age range options, and an additional open-ended area for comments. The pilot study results supported the deletion of the *I don't know* responses; the response was used an average of 8% of the time for the ORI-ASD and an average of 2% of the time for the TSES. The deletion resulted in a 6-point scale for the ORI-ASD

and a 9-point scale for the TSES. Students did not report any confused items or computer glitches within the online survey.

Sixty-three preservice teachers completed the combined scale (6 males; 57 females) with an average age of 20.4 years. Reliability for the ORI-ASD was deemed acceptable ($\alpha = .83$). Reliability for the TSES was also deemed acceptable ($\alpha = .926$). Results from the pilot study suggested proceeding with the research study.

Procedure

Permission to conduct this study was obtained from the IRB at Andrews University (see Appendix G). Schools were chosen from *Peterson's Colleges in the Midwest 2009* book (2008) based upon the presence of an education program. Contact information for education department administrators was generated through an internet search.

An email was sent to 286 school administrators asking for help gathering data and explained the nature of the research study (see Appendix A). Administrators from 43 of the 286 schools agreed to participate. Administrators who agreed to participate forwarded the email (with survey link) to all preservice teachers in their education program. The email included preservice teachers' confidentiality rights and what to do if they chose to discontinue the survey. Once preservice teachers entered the survey, an introductory page explained the research study again and prompted students to complete consent to participate within the study (see Appendix C). Upon consenting to participate, preservice teachers were directed to the combined scale. Directions and response keys for the ORI-ASD and TSES were posted at the top of each internet page. Preservice teachers were instructed to respond to survey items in a manner that best reflected their

opinions. The survey took approximately 15 minutes to complete.

The survey was administered and collected through SurveyMonkey to protect respondents' privacy and confidentiality. Various strategies were used to elicit a higher response rate. First, an email reminder was sent to administrators encouraging them to forward the online survey to their preservice teachers. Second, a \$25 Target gift card was promised to eight individuals based on a random drawing at the conclusion of the study.

Threats to Internal Validity

Prior experience working with students with ASD could have influenced responses. Further, the lack of differentiation between autistic disorder, Asperger's syndrome, Rett syndrome, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified may have influenced responses. It is possible that preservice teachers responded in a way they believed a teacher should respond rather than responding honestly. Those who did respond honestly may have experienced some emotionality (such as guilt, embarrassment, or shame). This study did not use deception or concealment.

Research Questions

1. What are preservice teachers' attitudes towards inclusion of students with ASD within the general education classroom?
2. What are preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting?
3. What are preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting?

4. Does a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict the dependent variable preservice teachers' attitudes towards inclusion of students?

Treatment of Data

Data were transferred to SPSS through a formatting option in SurveyMonkey. This ensured accurate data transfer and eliminated errors from human data entry. A review of descriptive statistics ensured all variables were within appropriate ranges. Means and standard deviations were analyzed to ensure the plausibility of options.

Individuals who did not complete any scale items were deleted ($N=152$). Frequency table analysis demonstrated a scattering of missing data which appeared to be random and did not warrant deletion (ORI-ASD missing per item: .2-.8%; TSES missing per item: 2.6-3.9%). Thus, mean scores were imputed for individuals missing few items to eliminate exclusion from the study.

Data Analysis

This study investigated preservice teachers' attitudes toward inclusion of students with ASD and their efficacy beliefs about their ability to educate students with ASD in an inclusive setting; explored the relationship between these two variables; and explored the relationship between preservice teachers' attitudes toward inclusion of students with ASD and special education coursework, experience with ASD, teacher gender, and teacher efficacy. The Statistical Package for the Social Sciences (SPSS) Version 22.0 for Windows was used to analyze data in this study.

Tests of Study Hypotheses

Due to the inconsistencies of the ORI factors in previous research, it was not evident whether a four-factor solution would fit for an ASD population. Further the TSES factor structure needed to be validated due to the differences between samples of teachers and preservice teachers. Thus, an exploratory factor analysis was completed for both the ORI-ASD and TSES. Factor analyses were completed to (a) reveal any latent variables, and (b) to identify and compare the factor structure of each scale to those identified in previous research. If the factor analysis identified new factors, these new factors would be used to measure preservice teachers' attitudes toward inclusion of students with ASD.

To answer the first three research questions, descriptive statistics were completed and included: frequency distributions, means, and standard deviations of the ORI-ASD and TSES.

To answer the fourth research question, several procedures were used: a categorical regression (CATREG) and a comparison of means. Categorical regression (CATREG) determined what, if any, demographic characteristics are useful in predicting preservice teachers' attitudes toward inclusion of students with ASD. CATREG is similar to multiple regression except it simultaneously scales nominal, ordinal, and numerical variables and quantifies categorical variables (Muelman & Heiser, 2007). CATREG quantifies categorical data by assigning numerical values to the categories. These variables can be used to predict attitudes and efficacy beliefs of preservice teachers.

Factor Analysis Criterion

Principal axis factor analysis (PAF) was the chosen method for factor analysis within this study. PAF was chosen because the aim of the factor analysis was to reveal latent variables that cause the variables to covary. While principal components analysis (PCA) is typically the default method of extraction on SPSS, PCA is a data reduction method rather than a true factor analysis procedure and does not take into consideration the underlying structures caused by latent variables.

A large sample size is required to complete a factor analysis because correlation coefficients tend to be less reliable when estimated from small samples. Comrey and Lee's (1992) advice regarding sample size is as follows: 50 cases is very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1,000 as excellent. Similar to Comrey and Lee's (1992) guidelines, Tabachnick and Fidell (2001) suggest having at least 300 cases to complete a factor analysis. This study surpasses that criterion with a sample of 1,028 participants.

Best-practice procedures as outlined in Costello and Osborne's (2005) criteria from "Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis" were implemented within this study.

Data Screening/Testing Assumptions

Factor analysis is a step-by-step process. The first step is to examine the factorability of the survey items. Factorability was determined through several criteria. First, items on the ORI-ASD and TSES were examined for multicollinearity. Items were excluded if they correlated too highly with one another ($\geq .8$) or if they did not correlate with at least one other item at a level of $\geq .4$. The cutoff point for inclusion of items was

set at 0.4. Stevens (2002) recommends using 0.4 as the cutoff point for item inclusion because it explains approximately 16% of the variable variance. Items not loading $\geq .4$ were eliminated from the factor analysis item by item.

Second, the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy criterion was used to determine factorability. Kaiser (1970) recommended a KMO value of $\geq .6$.

Third, Bartlett's test of sphericity criterion was used to test the hypothesis that the correlation matrix was an identity matrix. The associated probability needs to be $< .05$ to be eliminated as an identity matrix and run through factor analysis. Fourth, the diagonals of the anti-image correlation matrix were checked; items $> .5$ were included within the factor analysis. Finally, communalities were examined to see if items were all $> .3$ confirming all items shared some common variance with other items.

Number of Factors Retained

Four factor retention methods were used to avoid over and under extraction of factors: The Kaiser rule (minimum eigenvalue = 1; Kaiser, 1970), the scree plot (Cattell, 1966), Velicer's minimum average partial (MAP) test (Velicer, Eaton, & Fava, 2000), and Horn's parallel analysis (Horn, 1965). Results of these extraction methods were compared and contrasted to determine the final number of factors retained.

When evaluating factors, any factor with fewer than three items was considered weak and unstable, thus not retained in the analysis. To be deemed a solid factor, five or more items with loadings of $\geq .5$ had to be present (Costello & Osborne, 2005). Factor(s) meeting these criteria were retained. Finally, factors that were considered solid were reviewed for meaningfulness through content analysis.

Rotation of Factors

Factors were rotated to simplify and clarify the data structures to help with interpretation. Factor rotation maximizes the loadings of each variable on one of the factors while minimizing the loadings on all other factors (Field, 2005). Direct oblimin was chosen as the factor rotation method for this study because it permits the factors to correlate (Costello & Osborne, 2005). This was chosen over orthogonal rotation methods which produce uncorrelated factors.

Identification of Items in Each Factor

Item factor loadings on the pattern matrix were assessed using Comrey and Lee's (1992) suggested cutoffs for factor loadings: $>.70$ (excellent), $.63$ (very good), $.55$ (good), $.45$ (fair), and $.32$ (poor). Further, Tabachnick and Fidell (2001) cite $.32$ as a good 'rule of thumb' for minimum item loading because it approximates 10% overlapping variance with other items in that factor. For purposes of this study, a more conservative value of $>.4$ was considered an acceptable factor loading.

Naming and Definition of Factors

Factors were defined by two methods: studying the item content and identifying common themes among the factor loadings. Factor naming was completed through an analysis of the items that loaded on each factor.

CHAPTER 4

ANALYSIS OF DATA

The purpose of this study was to determine preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive setting. Relationships among teachers' attitudes toward inclusion of students with ASD, teacher efficacy, special education coursework, teacher gender, and teacher experience with ASD were explored. Preservice teachers completed an online combined scale that elicited information regarding these variables.

This section provides a step-by-step discussion of how the data were analyzed to answer the following research questions:

1. What are preservice teachers' attitudes towards inclusion of students with ASD within the general education classroom?
2. What are preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting?
3. What are preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting?
4. Does a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict the dependent variable preservice teachers' attitudes towards inclusion of students?

The statistical analyses performed on the data included descriptive statistics,

comparison of means, one sample *t*-tests, exploratory factor analysis, correlational analysis, and categorical regression with optimal scaling.

Description of the Sample

The research sample included preservice teachers attending colleges and universities primarily across the Midwestern region of the United States. Several additional states were represented: Utah, Oklahoma, and Florida (see Table 2). One thousand, one hundred and eighty individuals began the online survey resulting in 1,028 completed and usable surveys.

Demographics

The majority of preservice teachers were female (82.6%). Preservice teachers were largely between the ages of 20-22 (53.3%). Most preservice teachers were in their junior or senior year of college (54.4%) and majoring in general education (76.3%) (see Table 1).

Academic Preparation

Of all participants, 64.5% attended private institutions, 31.9% attended public universities, and 3.6% did not provide feedback. In regard to special education coursework, 30.4% of preservice teachers had completed at least one course while 34.4% had no special education coursework. Approximately 14% had taken more than five special education classes (see Table 2).

Table 1

Preservice Teachers' Demographics

Variable	Frequency	Percentage
Gender		
Male	138	13.4
Female	849	82.6
Unknown	41	4.0
Total	1,028	100
Age		
18	37	3.6
19	87	8.5
20	159	15.5
21	222	21.6
22	167	16.2
23	61	5.9
24	40	3.9
25	18	1.8
26	14	1.4
27+	192	18.7
Unknown	31	3.0
Total	1,028	100
Educational Level		
Freshman	83	8.1
Sophomore	143	13.9
Junior	239	23.2
Senior	321	31.2
Fifth Year Senior	75	7.3
Graduate Student	84	8.2
Doctoral Student	1	.1
Other	45	4.4
Missing	37	3.6
Total	1,028	100
Degree Area		
Elementary	401	39.0
Middle School	48	4.7
High School	226	22.0
Special Education	208	20.2

Table 1—*Continued.*

Variable	Frequency	Percentage
Foreign Language/ESL	13	1.3
Speech Pathology/Speech Therapy	12	1.2
Art	9	.9
Music	24	2.3
PE/Sport Management	14	1.4
Psychology	3	.3
Reading	7	.7
K-12 Unspecified	27	2.6
Missing	36	3.5
Total	1,028	100

Experience and Understanding of Efficacy and ASD

Approximately 32% of preservice teachers had no experience working with individuals with ASD. Nearly 64% had experience working with individuals with ASD at either an acquaintance or personal level.

Most preservice teachers had at least some understanding of ASD, as 35.2% fell between “Quite a Bit” to “A Great Deal” of ASD understanding ($M = 5.73$; $SD = 1.75$). Only 0.4% of preservice teachers had no understanding of ASD (see Table 3).

When looking at overall understanding of teacher efficacy, 81.3% of preservice teachers indicated they had “Some Degree” to “A Great Deal” of understanding ($M = 6.16$; $SD = 1.87$) (see Table 3). Only 2.2% of preservice teachers had no understanding of teacher efficacy (see Table 3).

Table 2

Preservice Teachers' Academic Preparation

Variable	Frequency	Percentage
School State		
Utah	11	1.1
Illinois	252	24.5
Indiana	28	2.7
Iowa	70	6.8
Kansas	17	1.7
Michigan	108	10.5
Minnesota	108	10.5
Missouri	11	1.1
North Dakota	11	1.1
Ohio	98	9.5
Oklahoma	36	3.5
South Dakota	40	3.9
Wisconsin	138	13.4
Florida	53	5.2
Other	2	.2
Unknown	45	4.4
Total	1,028	100
Public/Private University		
Public	328	31.9
Private	663	64.5
Unknown	37	3.6
Total	1,028	100
Special Education Coursework		
None	354	34.4
One	313	30.4
Two	92	8.9
Three	45	4.4
Four	36	3.5
Five	12	1.2
More than Five	143	13.9
Unknown	33	3.2
Total	862	100

Factor Analysis of the Opinions Relative to the Inclusion of Students With Disabilities–Autism Spectrum Disorders (ORI-ASD)

The goal of the ORI-ASD exploratory factor analysis was to understand the underlying structure of the set of variables. An additional goal was to verify the existence of Antonak and Larrivee's (1995) four-factor model and/or determine if a different factor model was present.

The factorability of the ORI-ASD was examined. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was found to be superb for factor analysis (.931) (see Table 4). Bartlett's sphericity test indicated the correlation matrix was not an identity matrix and thus reasonable for factorability.

The anti-image correlation diagonals ranged from .863 to .965 and supported inclusion of each item in the factor analysis. Principal Axis Factor Analysis (PAF) was completed with oblimin rotation including all 25 ORI-ASD items.

Four criteria measures were used to determine the number of factors to be retained and ensure accuracy: the Kaiser rule (Kaiser, 1970), the scree plot (Cattell, 1966), parallel analysis (Horn, 1965), and Velicer's minimum average partial procedure (MAP) (Velicer et al., 2000). The Kaiser rule (eigenvalue >1; Kaiser, 1970) suggested a five-factor solution. The scree plot indicated a three-factor solution. In contrast, the parallel analysis and MAP tests indicated a two-factor solution. The ORI authors indicated a four-factor solution. These summaries can be viewed in Table 5. Table 6 shows the number of items with communalities >.3 and the percentage of explained variance of the various models.

Table 3

Preservice Teachers' Experiences With ASD and Efficacy Beliefs

Variable	Frequency	Percentage
Preservice teachers' ASD Experience		
None	329	32.0
Acquaintance (Neighbor)	268	26.1
Casual (Co-worker)	122	11.9
Close (Friend, Relative)	230	22.4
Intimate (Sibling, Significant Other)	40	3.9
Unknown	39	3.8
Total	1,028	100
Understanding of ASD		
1 - None at All	4	.4
2	14	1.4
3 – Very Little	125	12.2
4	69	6.7
5 – Some Degree	246	23.9
6	170	16.5
7 – Quite a Bit	217	21.1
8	81	7.9
9 – A Great Deal	64	6.2
Unknown	38	3.7
Total	1,028	100
Understanding of Teacher Efficacy		
1 - None at All	23	2.2
2	19	1.8
3 – Very Little	59	5.7
4	58	5.6
5 – Some Degree	186	18.1
6	137	13.3
7 – Quite a Bit	293	28.5
8	121	11.8
9 – A Great Deal	99	9.6
Unknown	33	3.2
Total	1,028	100

Table 4

Measures of Sample Adequacy Criterion

Analysis	Kaiser-Meyer-Olkin	Bartlett's Test of Sphericity		
		Approx. Chi Square	df	Sig.
ORI-ASD	.931	6693.654	231	.000
TSES	.969	12242.837	276	.000

Table 5

Factor Retention Methods, ORI-ASD

Method	Number of Components Indicated
Eigenvalues > 1	5
Antonak and Larrivee (ORI Authors)	4
Scree Plot	3
Parallel Analysis	2
MAP	2

Table 6

Communalities and Percentage of Explained Variance, ORI-ASD

Model	Communalities >.3	% of Explained Variance
5 – Factor Model	19 of 25	41.10
4 – Factor Model	18 of 25	39.41
3 – Factor Model	17 of 25	36.97
2 – Factor Model	15 of 25	33.68
2 – Factor Modified*	14 of 22	34.72

*Used within the current study.

First, a five-factor model was examined as indicated by the Kaiser rule. In the five-factor model, 19 of the 25 communalities were >.3, confirming that each item shared some common variance with the other items. The six remaining items < .3 had more than 70% of their variance not represented by the common factor. The five-factor model

includes 13 items with loadings $>.4$ and explained 41.10% of the variance. Based on Stevens's (2002) earlier stated criteria, only items with factor loadings of $>.4$ were considered. Factor I did not contain items loading $>.4$. Factor II was comprised of three items loading $\geq .5$. Factor III was comprised of three items loading $\geq .5$. Factor IV was comprised of three items loading $\geq .5$. Finally, Factor V contained three items loading $\geq .5$ and one loading $>.4$ (see Table 20, Appendix H). The five-factor ORI-ASD model did not meet best-practice criteria and was not deemed an acceptable model (see Table 20, Appendix H).

A four-factor solution was examined as reported by ORI authors Antonak and Larrivee (1995). In the four-factor model, 18 of the 25 communalities were $>.3$, confirming that each item shared some common variance with the other items. The seven remaining items $< .3$ had more than 70% of their variance not represented by the common factor. The four-factor model includes 17 items with loadings $>.4$ and explained 39.41% of the variance. In examining individual items, a cutoff of $>.4$ was employed to identify significant factor coefficients. Factor I contained three items that loaded $\geq .5$. Factor II was comprised of two items that loaded $\geq .5$. Factor III contained three items that loaded $\geq .5$. Factor IV contained three items that loaded $\geq .5$. The four-factor ORI-ASD model did not meet best-practice criteria and was not deemed an acceptable model (see Table 21, Appendix H).

Next, a three-factor solution was examined as indicated by the scree plot. In the three-factor model, 17 of the 25 communalities were $>.3$, confirming that each item shared some common variance with the other items. The eight remaining items $< .3$ had more than 70% of their variance not represented by the common factor. The three-factor

model includes 20 items with loadings $>.4$ and explained 36.97% of the variance. In examining individual items, a cutoff of $>.4$ was employed to identify significant factor coefficients. Factor I contained eight items that loaded $\geq .5$. Factor II was comprised of six items that loaded $\geq .5$. Factor III did not contain any items loading $>.4$. While Factors I and II met best-practice criteria, Factor III did not. Thus, the three-factor ORI-ASD solution was not deemed an acceptable model (see Table 22, Appendix H).

Next, a two-factor solution was examined per the findings of the parallel analysis, MAP test, and findings from the three-factor PAF for the ORI-ASD. In the two-factor model, 15 of the 25 communalities were $>.3$, confirming that each item shared some common variance with other items. The 10 remaining items $<.3$ appeared to have a large proportion of unique variance. The two-factor model includes 19 items with loadings $>.4$ and explained 33.68% of the variance. In examining individual items, a cutoff of $>.4$ was employed to identify significant factor coefficients. Factor I was comprised of seven items with loading $\geq .5$. Factor II was comprised of six items loading $\geq .5$. Table 23 (see Appendix H) shows the Pattern Matrix for the two-factor model. While meeting best-practice criterion for factor analysis, the two-factor solution contained several items that did not load $>.4$. Thus a modified two-factor solution was completed.

Finally, a modified two-factor solution was examined. Items that did not have loadings $>.4$ were eliminated item by item and the factor analysis was re-run after each elimination. Deleted ORI-ASD items included: 1, 6, and 9. The removal of these three ORI-ASD items resulted in all remaining items loading $>.4$. In the modified two-factor model, 14 of the 22 communalities were $>.3$, confirming that each item of these items shared some common variance with other items. The eight remaining items $<.3$ appeared

to have a large proportion of unique variance. The modified two-factor model includes 22 items with loadings $>.4$ and explained 34.72% of the variance. In examining individual items, a cutoff of $>.4$ was employed to identify significant factor coefficients. Factor I contained seven items loading $\geq .5$ and was deemed a solid factor. Factor II was comprised of four items loading $\geq .5$ and one item loading at .493 (see Table 7). Although Factor II does not meet best-practice criterion for a solid factor, it is very close.

The modified two-factor ORI-ASD was examined using content analysis. The items on the ORI-ASD scale fell within two main categories: Factor I contained items related to preservice teachers' attitudes toward inclusion of students with ASD; Factor II contained items related to preservice teachers' efficacy beliefs toward inclusion of students with ASD. Therefore, I chose to use Factor I as a measure of attitudes toward inclusion and Factor 2 as a measure of efficacy beliefs about preservice teachers' ability to educate students with ASD in an inclusive classroom for two reasons: content analysis and the factor analysis. An examination of the items on each factor resulted in naming the factors: Attitudes Toward Inclusion of Students with ASD (Attitude towards Inclusion = 13 items) and Efficacy Beliefs about Preservice Teachers' Ability to Educate Students with ASD in an Inclusive Classroom (Efficacy towards Inclusion = 9 items). The modified two-factor ORI-ASD solution was deemed the best solution and used to answer the research questions within the study.

Content analysis of the ORI-ASD PAF show Antonak and Larrivee's four factors were subsumed under the two factors within the current study: Attitudes Towards Inclusion and Efficacy Towards Inclusion. The ORI Factor I (Benefits of Inclusion) is

Table 7

Modified ORI-ASD Two-Factor Model, Pattern Matrix

No.	Item	<i>Factors</i>	
		1	2
#17	The inclusion of students with ASD can be beneficial for students without disabilities.	.743	
#3	Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students.	.699	
*#20	Inclusion will likely have a negative effect on the emotional development of the student with an ASD.	.660	
#21	Students with ASD should be given every opportunity to function in the regular classroom where possible.	.606	
#7	The challenge of being in a regular classroom will promote the academic growth of the student with an ASD.	.585	
*#11	The presence of students with ASD will not promote acceptance of differences on the part of students without ASD.	.536	
#5	Students with ASD can best be served in regular classrooms.	.500	
*#14	Inclusion of the student with ASD will not promote his or her social independence.	.495	
*#12	The behavior of students with ASD will set a bad example for students without ASD.	.479	
#13	The student with ASD will probably develop academic skills more rapidly in a regular classroom than in a special classroom.	.454	
*#24	Isolation in a special classroom has a beneficial effect on the social and emotional development of the student with ASD.	.447	
*#18	Students with ASD are likely to create confusion in the regular classroom.	.404	
#25	The student with ASD will not be socially isolated in the regular classroom.	.403	
*#2	Inclusion of students with ASD will necessitate extensive retraining of regular-classroom teachers.		.664

Table 7—*Continued.*

No.	Item	<i>Factors</i>	
		1	2
*#8	Inclusion of students with ASD will require significant changes in regular classroom procedures.		.598
#19	Regular-classroom teachers have sufficient training to teach students with ASD.		.536
#16	Students with ASD will not monopolize the regular-classroom teacher's time.		.500
#22	The classroom behavior of the student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD.		.493
#10	Regular-classroom teachers have the ability necessary to work with students with ASD.		.478
*#15	It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD.		.472
#4	It is likely that the student with ASD will exhibit behavior problems in a regular classroom.		.454
*#23	Teaching students with ASD is better done by a specialist than by regular-classroom teachers.		.401

Note. Variance explained = 34.72%.

* Reverse Scored.

similar to the ORI-ASD Factor I, but with the addition of five items (3 from ORI Factor II; 2 from Factor ORI Factor IV). The ORI Factor III (Perceived Ability to Teach Students with Disabilities) is similar to ORI-ASD Factor II plus four additional items (4 from ORI Factor II and 2 items from ORI Factor IV). The ORI Factors II (Integrated Classroom Management) and IV (Special versus Integrated General Education) items were split equally across the two ORI-ASD factors.

The structure matrix for the modified ORI-ASD had acceptable item-to-factor correlations. The Factor Correlation Matrix indicated a moderate positive correlation between Factor I and Factor II ($r = .522$). The Reproduced Correlation Matrix indicated 21% of the residuals were $\geq .05$ suggesting the extracted factors were the only factors. The ORI-ASD Factor I and Factor II were deemed reliable ($\alpha = .860$; $\alpha = .801$, respectively).

The current findings clearly demonstrate a two-factor ORI-ASD solution; Factor I measures attitudes toward inclusion of students with ASD and Factor II measures efficacy beliefs about preservice teachers' ability to educate students with ASD. These two factors were used to answer the research questions posed within the study.

Teachers' Sense of Efficacy Scale (TSES)

The goal of the TSES exploratory factor analysis was to understand the underlying structure of the set of variables within the scale. Additional goals were to verify the existence of Tschannen-Moran and Woolfolk Hoy's (2001) three-factor model for teachers and/or determine if it better matched their proposed one-factor solution for preservice teachers. Finally, the TSES would be examined to determine if a different factor solution was present from Tschannen-Moran and Woolfolk Hoy's (2001) findings.

The factorability of the TSES questionnaire was examined before completion of a factor analysis. The TSES items suggested reasonable factorability with all item communalities loading $> .3$ confirming each item shared some common variance with the other items. The KMO was superb for factor analysis (.969) (see Table 4). Bartlett's sphericity test indicated that the correlation matrix was not an identity matrix. The anti-image correlation diagonals ranged from .357 to .609 and supported inclusion of each

item in the factor analysis. Given these overall indicators, the factor analysis was conducted with all 24 items of the TSES.

Four criteria measures were used to determine the number of factors to be retained and ensure accuracy: the Kaiser rule (Kaiser, 1970), the scree plot (Cattell, 1966), parallel analysis (Horn, 1965), and Velicer's minimum average partial procedure (MAP) (Velicer et al., 2000). The parallel analysis suggested a four-factor solution. The TSES authors suggested a three-factor solution for teachers. The Kaiser rule suggested a two-factor solution. The scree plot and MAP test indicated a one-factor solution. The TSES authors also suggested a one-factor solution for preservice teachers. These summaries can be viewed in Table 8. Table 9 shows the number of items with communalities $>.3$ and the percentage of explained variance of the various models.

First, a four-factor model was examined as outlined by parallel analysis. In the four-factor model, 24 of the 24 items had communalities $>.3$, confirming that each item shared some common variance with the other items. The four-factor model was comprised of all 24 TSES items; loadings ranged from .334 to .754 and explained 53.10% of the variance. Factor I included six items, four with loadings $\geq .5$. Factor II included six items, five with loadings $\geq .5$. Factor III contained one item. Factor IV contained five items, all with loadings $\geq .5$. Factors I and III did not have five or more items loading $\geq .5$ and were not deemed solid factors. Factors II and IV each had ≥ 5 items with significant loadings $\geq .5$ and were considered solid factors. The four-factor TSES model did not meet best-practice criteria and was not deemed an acceptable model (see Table 24, Appendix H).

Table 8

Factor Retention Methods, TSES

Method	Number of Components Indicated
Parallel Analysis	4
Tschannen-Moran and Woolfolk Hoy (2001) (Teachers)	3
Eigenvalues greater than 1	2
Tschannen-Moran and Woolfolk Hoy (2001) (Preservice teachers)	1
Scree Plot	1
MAP test	1

Table 9

Communalities and Percentage of Explained Variance, TSES

Models	Communalities >.3	% of Explained Variance
1-Factor Model	24	45.42
2-Factor Model	24	48.40
3-Factor Model	24	50.70
4-Factor Model	24	53.10

Next, a three-factor model was examined as outlined by TSES authors for teachers. In the three-factor model, 24 of the 24 items had communalities >.3, confirming that each item shared some common variance with the other items. The three-factor model was comprised of all TSES 24 items with loadings ranging from .400 to .829, explaining 50.70% of the variance. Factor I included 11 items, Factor II included seven items, and Factor III included three items. Factors I and II each were comprised of ≥ 5 items with significant loadings $\geq .5$ and deemed solid factors. Factor III did not have ≥ 5 items with significant loadings $\geq .5$. The three-factor TSES model did not meet best-practice criteria and was not deemed an acceptable model (see Table 25, Appendix H).

Next, a two-factor solution was examined as indicated by eigenvalues >1. In the

two-factor model, 24 of the 24 items had communalities $>.3$, confirming each item shared some common variance with the other items. The two-factor model was comprised of 24 TSES items with loadings ranging from .512 to .797 and explained 48.40% of the variance. Factor I included all 24 items with significant loadings $\geq .5$, leaving Factor II with one cross-loading item (item 18). Factor I met Costello and Osborne's (2005) best-practice criteria and was considered a solid factor. However, Factor II was not considered solid because it contained only one cross-loading item. Thus, the two-factor model did not meet best-practice criteria and was not deemed an acceptable model (see Table 26, Appendix H).

Finally, a one-factor solution was examined as suggested by the scree plot, MAP procedure, and the TSES authors' findings for preservice teachers. Further, PAF results from the two-factor rotated model suggested a one-factor solution. In the one-factor model, 24 of the 24 items had communalities $>.3$, confirming each item shared some common variance with other items. The one-factor model was comprised of 24 items, all significantly loading $\geq .5$ (range = .582 to .787) and explained 45.42% of the variance. The TSES appears to be a unidimensional scale and met best practice-criteria and was deemed an acceptable model (see Table 10).

In determining the best factor solution, it is believed the four-factor, three-factor and two-factor TSES solutions were all unsatisfactory. In the four-factor model, Factors II and IV appeared stable; however, Factors I and III were not. Thus, the four-factor model did not appear appropriate. In the three-factor model, Factors I and II appeared stable; however only two items loaded $\geq .5$ on Factor III. Thus, the three-factor model

Table 10

TSES One-Factor Model, Factor Matrix

No.	Item	Loadings
#16	How well can you establish a classroom management system with each group of students?	.787
#23	How well can you implement alternative strategies in your classroom?	.762
#14	How much can you do to improve the understanding of a student who is failing?	.742
#19	How well can you keep a few problem students from ruining an entire lesson?	.741
#21	How well can you respond to defiant students?	.715
#15	How much can you do to calm a student who is disruptive or noisy?	.699
#13	How much can you do to get children to follow classroom rules?	.694
#24	How well can you provide appropriate challenges for very capable students?	.688
#11	To what extent can you craft good questions for your students?	.685
#3	How much can you do to control disruptive behavior in the classroom?	.684
#9	How much can you do to help your students value learning?	.679
#4	How much can you do to motivate students who show low interest in school work?	.671
#10	How much can you gauge student comprehension of what you have taught?	.670
#2	How much can you do to help your students think critically?	.669
#18	How much can you use a variety of assessment strategies?	.667
#8	How well can you establish routines to keep activities running smoothly?	.651
#17	How much can you do to adjust your lessons to the proper level for individual students?	.641
#1	How much can you do to get through to the most difficult students?	.640
#20	To what extent can you provide an alternative explanation of example when students are confused?	.629
#22	How much can you assist families in helping their children do well in school?	.620

Table 10—*Continued.*

No.	Item	Loadings
#6	How much can you do to get students to believe they can do well in school?	.613
#12	How much can you do to foster student creativity?	.598
#7	How well can you respond to difficult questions from your students?	.597
#5	To what extent can you make your expectations clear about student behavior?	.582

Note. Variance explained = 45.42%.

was not appropriate. As a result, a two-factor model was examined. The two-factor model contained all of the TSES items on Factor I ($\geq .5$) with one item (item 18) cross-loading on Factor II (.415). Results of the two-factor model illustrate the unidimensional properties of the TSES scale. As a result, the factor analysis was re-run using a one-factor model. In this analysis, all 24 TSES items had loadings $\geq .5$ demonstrating a solid factor and meeting best-practice criterion. The TSES one-factor solution was used to answer research questions.

Factor Solutions for the ORI-ASD and the TSES Scales

The ORI-ASD Factor I (Attitudes Toward Inclusion) included 13 items that factored together at $\geq .4$ and yielded a reliability coefficient of .860. Of these 13 items, seven items loaded $\geq .5$, meeting best-practice criterion deeming it a solid factor. The ORI-ASD Factor II (Efficacy Toward Inclusion) included nine items that factored together at $\geq .4$. Of these nine items, four loaded $\geq .5$ with one item loading at .493 falling short of the $\geq .5$ cutoff for best practice criterion. While falling short of best-practice criterion for being termed a solid scale, it is very close. The reliability coefficient for

Factor II, Efficacy Toward Inclusion, is .801 and deemed acceptable.

The TSES Factor I (Teacher Efficacy) included 24 items that factored together at a $\geq .4$ level. Additionally, each of the 24 items loaded $\geq .5$ meeting best-practice criterion and was termed a solid factor. The reliability coefficient for TSES Factor I is .952 and deemed acceptable (see Table 11).

Within this study, efficacy was defined as a person's belief that he or she is capable of achieving a goal (Bandura, 1977). Results of the exploratory factor analysis identified an efficacy factor within the ORI-ASD, Factor II. Factor II of the ORI-ASD is defined as a preservice teacher's belief that he or she is capable of educating a student with ASD in an inclusive classroom. The TSES Factor is defined as a preservice teacher's belief that he or she is capable of educating a student with disabilities in an inclusive classroom.

A content analysis of the efficacy items on the ORI-ASD Factor II and TSES indicates different measures of efficacy. For example, item 4 on the ORI-ASD stated, "It is likely that the student with ASD will exhibit behavior problems in a regular classroom." In an attempt to find a similar item on the TSES, three TSES items were identified that could be considered close. The first, item three, stated, "How much can you do to control disruptive behavior in the classroom?" The second, item 15, stated, "How much can you do to calm a student who is disruptive or noisy?" The third, item 21, stated, "How well can you respond to defiant students?"

Further, item 8 on the ORI-ASD Factor II stated, "Integration of students with ASD will require significant changes in regular classroom procedures." The TSES had several items that could be considered related to this item. The first, item 8, asked, "How

well can you establish routines to keep activities running smoothly?” The second, item 13, asked, “How much can you do to get children to follow classroom rules?” The third, item 16, asked, “How well can you establish a classroom management system with each group of students?” These differences highlight the different efficacy beliefs across the ORI-ASD Factor II and the TSES. Thus, the ORI-ASD was used as a measure of preservice teacher efficacy beliefs about their ability to educate students with ASD within the inclusive classroom. The TSES was used as a measure of preservice teacher efficacy beliefs about their ability to educate students with disabilities within the inclusive classroom.

Table 11

Reliability Estimates

Variable	No. of Items	Cronbach's Alpha
ORI-ASD		
Factor I – Attitudes Towards Inclusion (Items: 3, 5, 7, 11, 12, 13, 14, 17, 18, 20, 21, 24, 25)	13	.860
Factor II – Efficacy Toward Inclusion (Items: 2, 4, 8, 10, 15, 16, 19, 22, 23)	9	.801
TSES		
Factor I– Teacher Efficacy	24	.952

Research Questions

Research Question 1

What are preservice teachers' attitudes towards inclusion of students with ASD within the general education classroom? In order to answer the first question, the total mean scores for ORI-ASD Factor I were calculated. A total of 1,028 preservice teachers

completed the ORI-ASD using a 6-point Likert scale.

Preservice teachers appear to have positive attitudes toward inclusion of students with ASD. The ORI-ASD Factor I scores ranged from 1.38 to 6.00. The mean total score for preservice teachers is 4.52 with a mode of 4.46 ($SD = .672$). Several ORI-ASD Factor I items were highly rated by preservice teachers. Item 21 had a mean score of 5.31 (Students with ASD should be given every opportunity to function in the regular classroom where possible). Item 3 had a mean score of 5.22 (Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students). Item 17 had a mean score of 5.03 (The inclusion of students with ASD can be beneficial for students without ASD) (see Table 12). Further, item 12 had a mean score of 4.99 (The behavior of a student with ASD will set a bad example for students without disabilities). Approximately 90% of preservice teachers believed students with ASD would not set a bad example (see Appendix H, Table 31). These items rated most positively by preservice teachers show us that they believe students with ASD should be placed within the general education classroom. Further, preservice teachers believe inclusion would help all students within the classroom, not just the students with ASD.

Research Question 2

What are preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting? In order to answer the second question, the total mean scores for ORI-ASD Factor II were calculated to measure preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting. A total of 1,028 preservice teachers completed the ORI-ASD using a 6-point Likert scale.

Table 12

Adapted ORI-ASD Factor I–Attitudes Toward Inclusion

Item		<i>N</i>	Mean	<i>SD</i>
#21	Students with ASD should be given every opportunity to function in the regular classroom where possible.	1,026	5.31	.93
#3	Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students.	1,024	5.22	.95
#17	The inclusion of students with ASD can be beneficial for students without ASD.	1,026	5.03	.98
*#12	The behavior of students with ASD will set a bad example for students without ASD.	1,025	4.99	1.06
*#11	The presence of students with ASD will not promote acceptance of differences on the part of students without ASD.	1,025	4.73	1.21
*#14	Inclusion of the student with ASD will not promote his or her social acceptance.	1,025	4.68	1.19
*#20	Inclusion will likely have a negative effect on the emotional development of the student with ASD.	1,026	4.53	.97
*#24	Isolation in a special classroom has a beneficial effect on the social and emotional development of the student with ASD.	1,025	4.40	1.24
#7	The challenge of being in a regular classroom will promote the academic growth of the student with ASD.	1,026	4.36	1.06
*#18	Students with ASD are likely to create confusion in the regular classroom.	1,021	4.18	1.11
#5	Students with ASD can best be served in regular classrooms.	1,022	3.84	1.19
#25	The student with ASD will not be socially isolated in the regular classroom.	1,026	3.82	1.18
#13	The student with ASD will probably develop academic skills more rapidly in a regular classroom than in a special classroom.	1,025	3.64	1.16
Total Scale Mean		1,028	4.52	.672

*Reverse scored.

Preservice teachers' efficacy beliefs toward their ability to educate students with ASD in the general classroom appear to be low. The scores ranged from 1.00 to 5.78. Preservice teachers had a mean efficacy score of 3.19 with a mode of 3.11 ($SD = .767$) on a 6-point Likert scale. Preservice teachers did not feel prepared or trained for inclusion of students with ASD within the classroom.

Preservice teachers rated several ORI-ASD Factor II items very low (see Table 13). The first of these was item 22 with a mean score of 2.67 (The classroom behavior of the student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD). Item 19 had a mean score of 2.84 (Regular-classroom teachers have sufficient training to teach students with ASD). Approximately 73% of preservice teachers felt they had insufficient training to teach students with ASD (see Appendix H, Table 29). Item 2 (reverse scored) had a mean score of 2.86 (Inclusion of students with ASD will necessitate extensive retraining of regular classroom teachers). Further, approximately 75% of preservice teachers felt they would need extensive retraining (see Appendix H, Table 27). Finally, item 4 (reverse scored) had a mean score of 2.98 (It is likely that the student with ASD will exhibit behavior problems in a regular classroom) (see Appendix H, Table 30). These poorly rated items show us preservice teachers believed inclusion of a student with ASD required more patience. They did not feel they had sufficient training to teach students with ASD in inclusive classrooms. Further, they felt that students with ASD would exhibit behavior problems if placed in an inclusive setting. However, preservice teachers were divided about their belief in their ability necessary to work with students with ASD (item 10). Approximately 55% of preservice teachers believed they had the ability to

work with students with ASD while approximately 45% did not feel they had the necessary ability (see Appendix H, Table 28).

Research Question 3

What are preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting? In order to answer the third question, the total mean scores for TSES were calculated. A total of 1,001 preservice teachers completed the TSES using a 9-point Likert scale.

Preservice teachers appeared to have high efficacy beliefs about their ability to educate students with disabilities in the general education classroom. The mean total TSES score was 7.16 with a mode of 7.17 ($SD = .982$) using a 9-point Likert scale.

Preservice teachers responded very positively toward several TSES items. The first of these was item 5 with a mean score of 8.20 (To what extent can you make your expectations clear about student behavior?). Preservice teachers highly rated item 6 which had a mean score of 7.69 (How much can you do to get students to believe they can do well in school work?). And preservice teachers responded positively to question 8 with a mean score of 7.68 (How well can you establish routines to keep activities running smoothly?) (see Table 14). These highly rated responses show that preservice teachers believed they could make class expectations clear for students with disabilities. They also felt they could establish routines in the classroom to help students with disabilities be successful.

Research Question 4

Does a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict preservice teachers' attitudes towards inclusion of students? In order to answer the fourth

Table 13

ORI-ASD Factor II–Efficacy Toward Inclusion

Item	<i>N</i>	Mean	<i>SD</i>
*#15 It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD.	1,026	3.73	1.41
#10 Regular-classroom teachers have the ability necessary to work with students with ASD.	1,020	3.69	1.31
#16 Students with ASD will not monopolize the regular-classroom teacher's time.	1,025	3.64	1.18
*#8 Inclusion of students with ASD will require significant changes in regular classroom procedures.	1,023	3.18	1.22
*#23 Teaching students with disabilities is better done by special than by regular-classroom teachers.	1,021	3.16	1.21
*#4 It is likely that the student with ASD will exhibit behavior problems in a regular classroom.	1,024	2.98	1.11
*#2 Inclusion of students with ASD will necessitate extensive retraining of regular- classroom teachers.	1,024	2.82	1.23
#19 Regular-classroom teachers have sufficient training to teach students with ASD.	1,026	2.80	1.18
#22 The classroom behavior of the student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD.	1,023	2.67	1.28
Total Scale Mean	1,028	3.19	.767

*Reverse scored.

Table 14

TSES Factor I–Teacher Efficacy

Item		<i>N</i>	Mean	<i>SD</i>
#5	To what extent can you make your expectations clear about student behavior?	995	8.20	1.17
#6	How much can you do to get students to believe they can do well in school work?	995	7.69	1.31
#8	How well can you establish routines to keep activities running smoothly?	992	7.68	1.34
#2	How much can you do to help your students think critically?	998	7.38	1.35
#20	To what extent can you provide an alternative explanation or example when students are confused?	993	7.32	1.34
#24	How well can you provide appropriate challenges for	994	7.32	1.40
#12	How much can you do to foster student creativity?	991	7.31	1.42
#13	How much can you do to get children to follow classroom rules?	994	7.30	1.32
#18	How much can you use a variety of assessment strategies? very capable students?	994	7.27	1.51
#3	How much can you do to control disruptive behavior in the classroom?	996	7.23	1.43
#9	How much can you do to help your students value learning?	994	7.23	1.39
#16	How well can you establish a classroom management system with each group of students?	991	7.20	1.44
#11	To what extent can you craft good questions for your students?	990	7.19	1.39
#10	How much can you gauge student comprehension of what you have taught?	996	7.15	1.33

Table 14—*Continued.*

Item	<i>N</i>	Mean	<i>SD</i>
#17 How much can you do to adjust your lessons to the proper level for individual students?	993	7.05	1.48
#7 How well can you respond to difficult questions from your students?	996	7.01	1.38
#23 How well can you implement alternative strategies in your classroom?	988	7.01	1.45
#4 How much can you do to motivate students who show low interest in school work?	995	6.94	1.48
#1 How much can you do to get through to the most difficult students?	1,001	6.88	1.51
#14 How much can you do to improve the understanding of a student who is failing?	996	6.84	1.38
#19 How well can you keep a few problem students from ruining an entire lesson?	994	6.74	1.42
#15 How much can you do to calm a student who is disruptive or noisy?	991	6.71	1.39
#21 How well can you respond to defiant students?	995	6.68	1.52
#22 How much can you assist families in helping their children do well in school?	994	6.65	1.63
Total Scale Mean	1,001	7.16	.982

question, several procedures were used: Pearson correlations, comparison of means, and CATREG analysis.

To investigate the influence of special education coursework, teacher experience with ASD, teacher gender, and teacher efficacy toward preservice teachers' attitudes

toward inclusion of students with ASD, Pearson correlations, one-sample *t*-tests, and comparison of means were computed.

First, a significant correlation was found for preservice teachers' attitudes toward inclusion of students with ASD and special education coursework, $r = .103$, p (two-tailed) $< .00$, effect size .01 (see Table 15). A comparison of means shows that preservice teachers with five special education classes ($M = 4.64$) have more positive attitudes toward inclusion of students with ASD than those with one special education course ($M = 4.50$) and/or no special education course ($M = 4.46$) (see Table 16).

Second, a significant correlation was found for preservice teachers' attitudes toward inclusion of students with ASD and preservice teachers' experience with ASD, $r = .188$, p (two-tailed) $< .00$, effect size .04 (see Table 15). A comparison of means shows preservice teachers' with experience working with students with ASD at a close level (friend, relative) have a mean of 4.72; while preservice teachers with no experience working with students with ASD have a mean of 4.39 (see Table 16). Preservice teachers with more experience working with individuals with ASD had more positive attitudes toward inclusion of students with ASD.

Third, a significant correlation was found for preservice teachers' attitudes toward inclusion of students with ASD and preservice teachers' gender ($r = .113$, p (two-tailed) $< .00$, effect size .01) (see Table 15). A comparison of means shows female preservice teachers have more positive attitudes toward inclusion of students with ASD ($M = 4.56$) than do male preservice teachers ($M = 4.34$) (see Table 16).

Fourth, a significant correlation was found for preservice teachers' attitudes toward inclusion of students with ASD (as measured on ORI-ASD Factor I) and teacher

efficacy beliefs about their ability to educate students with ASD in an inclusive setting (as measured on the ORI-ASD Factor 2) ($r = .593$, p (two-tailed) $<.000$, effect size .35) (see Table 15). Further, preservice teachers' attitudes toward inclusion of students with ASD (ORI-ASD Factor I) are positively correlated with teacher efficacy beliefs about their ability to educate students with disabilities in an inclusive setting (ORI Factor II) ($r = .237$, p (two-tailed) $<.00$, effect size .06) (see Table 15).

Table 15

Correlations for Efficacy Beliefs and Independent Variables

	Gender	SPED Courses	ORI-ASD Factor I	ORI-ASD Factor II	Experience with ASD	TSES
Gender	1	.080*	.113**	-.017	.014	.041
SPED Courses		1	.103**	.038	.102**	.110**
ORI-ASD Factor I			1	.593**	.188**	.237**
ORI-ASD Factor II				1	.159**	.119**
Experience with ASD					1	.104**
TSES						1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Fifth, the number of special education courses completed by preservice teachers is significantly correlated with teacher efficacy beliefs about their ability to educate students with disabilities in an inclusive classroom (as measured on the TSES), $r = .11$, p (two-tailed) $<.01$, effect size .01 (see Table 15). Preservice teachers with more special education courses (five or more) have higher efficacy beliefs about their ability to educate students with disabilities in an inclusive setting ($M = 7.30$) than those with one special education course ($M = 7.16$) or no special education course ($M = 7.10$) (see Table 16). Interestingly, preservice teachers' efficacy beliefs about their ability to educate

students with ASD in an inclusive setting (as measured on ORI Factor II) were not significantly correlated with the number of special education courses completed ($r = .038$) (see Table 15).

Sixth, preservice teacher efficacy beliefs about their ability to educate students with disabilities in an inclusive setting (as measured on the TSES) are positively correlated with experience working with students with ASD ($r = .13$, p (two-tailed) $< .01$, effect size .02) (see Table 15).

CATREG analysis was completed because the independent variables were categorical. For CATREG, the SPSS default settings were used. The default setting for exclusion of missing data was $\geq 15\%$ which was consistent with George and Mallery's (2006) recommendation. The CATREG analysis was run using 979 cases; 49 cases were omitted due to missing data and were eliminated list wise. Several CATREG equations were completed using ORI-ASD Factor I as the dependent variable. Special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy about their ability to educate students with disabilities were computed as independent variables. CATREG findings were analyzed and additional CATREG analyses were computed based on findings in previous analyses.

The first CATREG included the independent variables: special education coursework, preservice experience with ASD, preservice teacher gender, and preservice teacher efficacy about their ability to educate students with disabilities; a significant equation was reported ($F(9, 969) = 14.93$; $p < .000$) with an R^2 of .122 and an adjusted R^2 of .114. I can explain 12.2% of the variance in preservice teachers' attitudes toward inclusion of students with ASD through special education coursework, preservice teacher

Table 16

Preservice Teachers' Demographics–Independent Variable Comparison of Means

Variable	Mean ORI-ASD Factor I	Mean ORI-ASD Factor II	Mean TSES
Gender			
Male	4.34	3.22	7.07
Female	4.56	3.19	7.18
Total	4.53	3.19	7.17
Special Education Courses			
None	4.46	3.16	7.01
One	4.50	3.17	7.16
Two	4.55	3.29	7.40
Three	4.66	3.40	7.36
Four	4.70	3.20	7.43
Five	4.64	3.24	7.36
More than five	4.64	3.22	7.30
Total	4.52	3.20	7.17
Experience with ASD			
None	4.39	3.07	7.05
Acquaintance	4.47	3.15	7.12
Casual	4.57	3.22	7.24
Close	4.72	3.38	7.33
Intimate	4.69	3.41	7.24
Total	4.52	3.20	7.17

experience with ASD, preservice teacher gender, and preservice teacher efficacy (see Table 17).

Pratt's measure of relative importance indicated preservice teacher efficacy about their ability to educate students with disabilities (Importance = .505) contributes the most to the variance in preservice teachers' attitudes toward inclusion of students with ASD. Preservice teacher experience with ASD (Importance = .389) was the second most important variable influencing preservice teachers' attitudes toward inclusion of students

with ASD (see Table 17). These findings prompted a second CATREG using the variables of most importance: teacher efficacy about their ability to educate students with disabilities and teacher experience with ASD.

Table 17

Correlations, Coefficients, p Values, and Importance of the Demographic Variable Teacher Efficacy to Teachers' Overall Attitudes Toward Inclusion of Students With ASD (CATREG)

Variable	Standardized Coefficient-Beta	Correlations			
		Zero-Order	Partial	Part	Importance
Special Education					
Coursework	.509	.110	.062	.058	.053
Preservice Teacher	.204	.233	.211	.202	.389
Experience with ASD					
Preservice Teacher Gender	.070	.092	.074	.069	.052
Preservice Teacher Efficacy (TSES)	.233	.264	.238	.230	.505

Note. Dependent Variable: ORI-ASD-Factor I (Attitudes toward Inclusion); Multiple $R = .349$; $R^2 = .122$; Adjusted $R^2 = .114$; $F = 14.928$; Sig. = .000.

A second CATREG equation was computed and included the independent variables found to be of the highest importance in the first CATREG: preservice teacher experience with ASD and preservice teacher efficacy about their ability to educate students with disabilities; a significant regression equation was found ($F_{(7, 981)} = 17.699$; $p < .000$) with an R^2 of .112 and an adjusted R^2 of .106. Together, preservice teacher experience with ASD and preservice teacher efficacy about their ability to educate students with disabilities explains 11.2% of the variance in preservice teachers' attitudes toward inclusion of students with ASD.

Pratt's measure of relative importance indicated preservice teacher efficacy about their ability to educate students with disabilities (Importance = .586) contributes the most

to the variance in preservice teachers' attitudes toward inclusion of students with ASD. While important, preservice teacher experience with ASD (Importance = .414) was not as important as preservice teacher efficacy about their ability to educate students with disabilities (see Table 18). Thus, a third CATREG was computed using only one variable: preservice teacher efficacy about their ability to educate students with disabilities.

Table 18

Correlations, Coefficients, p Values, and Importance of the Demographic Variables Teacher Efficacy, Special Education Courses, Experience With ASD, Understanding of ASD, and Understanding of Teacher Efficacy to Teachers' Overall Attitudes Toward Inclusion of Students With ASD (CATREG)

Variable	Standardized Coefficient-Beta	Correlations			
		Zero-Order	Partial	Part	Importance
Preservice Teacher Experience with ASD	.203	.229	.209	.202	.414
Preservice Teacher Efficacy	.246	.267	.251	.245	.586

Note. Dependent Variable: ORI-ASD-Factor I (Attitudes toward Inclusion); Multiple $R = .335$; $R^2 = .112$; Adjusted $R^2 = .106$; $F = 17.699$; Sig. = .000.

A third CATREG was computed using preservice teacher efficacy about their ability to educate students with disabilities as the independent variable. Preservice teacher efficacy about their ability to educate students with disabilities was isolated within this CATREG based upon its level of importance in the previous CATREG models; a significant regression equation was found ($F_{(4, 996)} = 19.289$; $p < .000$) with an R^2 of .072 and an adjusted R^2 of .068. This indicates 7.2% of the variance in preservice teachers' attitudes toward inclusion of students with ASD can be explained by preservice teacher efficacy about their ability to educate students with disabilities (see Table 19).

Table 19

Correlations, Coefficients, p Values, and Importance of the Demographic Variables to Teachers' Overall Attitudes Toward Inclusion of Students With ASD (CATREG)

Variable	Standardized Coefficient-Beta	Correlations		
		Zero-Order	Partial Part	Importance
Preservice Teacher Efficacy	.268	.268	.268	1.0

Note. Dependent Variable: ORI-ASD-Factor I (Attitudes toward Inclusion); Multiple $R = .268$; $R^2 = .072$; Adjusted $R^2 = .068$; $F = 19.298$; Sig. = .000.

CATREG analyses were performed for the dependent variable (preservice teachers' attitudes toward inclusion of students with ASD) and the independent variables: preservice teacher experience with ASD, special education coursework, preservice teacher gender, and preservice teacher efficacy about their ability to educate students with disabilities; a significant equation was reported ($F(9, 969) = 14.93$; $p < .000$) with an R^2 of .122 and an adjusted R^2 of .114. Thus, 12.2% of the variance in preservice teachers' attitudes toward inclusion of students with ASD can be explained through special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy about their ability to educate students with disabilities. Pratt's measure of relative importance indicated preservice teacher efficacy about their ability to educate students with disabilities (Importance = .586) and preservice teacher experience with ASD (Importance = .414) contributed the most to the variance in preservice teachers' attitudes toward inclusion of students with ASD. The combination of these two independent variables was able to predict 11.2% of the variability in preservice teachers' attitudes toward inclusion of students with ASD. Specifically, 7.2% of the variability in preservice teachers' attitudes toward inclusion of students with ASD could be predicated by preservice teacher efficacy about their ability

to educate students with disabilities. Preservice teacher gender and special education coursework were not found to be important contributors of preservice teachers' attitudes toward inclusion of students with ASD based on findings from Pratt's measure of relative importance.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The incidence of individuals identified with ASD has significantly increased over the last decade. The increase in identification of children with ASD will likely result in an increase in their placement into general education classrooms. Teachers are willing to include students with ASD within the classroom, but believe they are ill-prepared for inclusion (McGregor & Campbell, 2001; Park & Chitiyo, 2011; Park et al., 2010; Segall, 2008; Wilkerson, 2012). Further, teachers believe inclusionary training should have occurred within their preservice teacher education coursework (Betancourt-Smith, 1994; Burke & Sutherland, 2004; Hammond & Ingalls, 2003; Kwapy, 2004; Scruggs & Mastropieri, 1996; Sindelar, 1995). One of the most important predictors for successful inclusion is teacher attitude (Algahazo et al., 2003; Martin & Kudláček, 2010; Romi & Leyser, 2006). Some authors have suggested a direct link between teacher training and efficacy (Forlin et al., 2010; Knoblauch & Woolfolk Hoy, 2008; Walls, 2007). Given that teacher training is related to efficacy, and given that such training occurs at the preservice teacher preparation stage, it is imperative that we study attitudes and efficacy beliefs of preservice teachers. It is pertinent to shape teachers' attitudes toward inclusion of students with ASD and their efficacy beliefs about their ability to educate students with ASD within inclusive settings prior to their entrance into the teaching field. Thus,

the primary purpose of this study was to investigate preservice teachers' attitudes toward inclusion of students with ASD and their efficacy beliefs about their ability to educate students with ASD in the general education classroom.

A literature review highlighted a need to investigate the factor structure of two instruments commonly used to measure teachers' attitudes and efficacy beliefs toward inclusion of students with disabilities in the general education classroom, namely the Opinions Relative to the Integration of Students with Disabilities (ORI) and the Teachers' Sense of Efficacy Scale (TSES). Multiple factor structures were reported for the ORI, ranging from one to four factors (Dupoux et al., 2006; Jobe et al., 1996). One study did not report their ORI factor findings because they were different from the authors'. Similarly, the TSES factor structure was investigated. Several studies reported a three-factor TSES solution for teachers and a one-factor solution for preservice teachers (Fives & Buehl, 2010; Tschannen-Moran & Woolfolk Hoy, 2001).

Summary of Methodology

This quantitative study used the survey research method and online surveys to gather data. The target population included preservice teachers enrolled in teacher education programs in the Midwestern region of the United States. Two scales were used to measure teacher attitudes and efficacy beliefs regarding (a) including students with ASD within the general education classroom, and (b) including children with unspecified disabilities within the general education classroom. The original 25-item ORI was modified to address preservice teachers' attitudes and efficacy beliefs toward including students with ASD in the general education environment and named the ORI-ASD. The second scale was the 24-item TSES, and was used to determine preservice

teachers' efficacy beliefs about including children with disabilities in the general classroom setting. There were 10 demographic items, one comment area for survey concerns, and one comment area for a Target gift card drawing. A standardized email was sent to school administrators of 286 university teacher education departments. Forty-three of these administrators agreed to participate in the study and forwarded the online survey link to preservice teachers in their respective programs.

Prior to answering the research questions, a validation study was carried out to verify the structure of both the ORI-ASD and TSES. Exploratory factor analysis was the methodology used to validate the instruments.

Validation of the Instruments

Exploratory factor analyses of the instruments were carried out following best practices, as suggested by Costello and Osborne (2005). Further, four factor retention methods were used to eliminate over or under extraction of factors and enhance the reliability and validity of the study.

The results of the factor analysis indicated two factors in the ORI-ASD scale. My ORI-ASD results were then compared with Antonak and Larrivee's (1995) four-factor ORI solution. Their four factors were: Factor I (Benefits of Integration); Factor II (Integrated Classroom Management); Factor III (Perceived Ability to Teach Students with Disabilities); Factor IV (Special Versus Integrated General Education). Comparing the factors in my study with Antonak and Larrivee's, I found our Factors I to be similar, in that the same items were present. However, in my model, five additional items loaded on Factor I (3 from Factor II; 2 from Factor IV). My ORI-ASD Factor II is similar to their ORI Factor III; again, the same items were present, plus four additional items (2

items from Factor II and 2 items from Factor IV). I examined the items in both factors, and named Factor I, Attitudes Toward Inclusion, and Factor II, Efficacy Toward Inclusion. Therefore, I chose to use ORI-ASD Factor I as the attitude scale in my study. This is in agreement with Romi and Leyser's (2006) decision to measure preservice teachers' attitudes using ORI Factor I.

Factor analysis of the second instrument, the TSES, indicated a one-factor solution, supporting the results of Moran and Woolfolk-Hoy (2001) and Fives and Buehl (2010). It was therefore concluded that the TSES is a unidimensional scale which measures preservice teacher efficacy beliefs about their ability to educate students with disabilities.

As a result of the validation study, the ORI-ASD was divided into two scales; one measuring attitudes toward inclusion and one measuring teacher efficacy beliefs about their ability to educate students with ASD in the general education classroom. The TSES, in its original form, was used to measure preservice teachers' efficacy beliefs about their ability to educate students with disabilities in the general education classroom. These scales became the instruments for this study.

There were four research questions addressed in this study: Research question 1 (What are preservice teachers' attitudes towards inclusion of students with ASD within the general education classroom?) was addressed using the ORI-ASD Factor I; research question 2 (What are preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting?) was addressed using the ORI-ASD Factor II; research question 3 (What are preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting?) was addressed using the TSES;

research question 4 (Does a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict preservice teachers' attitudes towards inclusion of students?) was addressed using the ORI-ASD Factor I and the variables special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy.

Research Questions

Research Question 1

What are preservice teachers' attitudes towards inclusion of students with ASD within the general education classroom?

Preservice teachers' attitudes toward inclusion of students with ASD were measured using the ORI-ASD Factor I. The mean ORI-ASD Factor I score for preservice teachers was 4.52 with a mode of 4.46 ($SD = .672$) on a 6-point Likert scale. Preservice teachers appear to have positive attitudes toward inclusion of students with ASD.

Research Question 2

What are preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting?

Preservice teachers' efficacy beliefs about their ability to educate students with ASD were measured using ORI-ASD Factor II. Preservice teachers had a mean score of 3.19 with a mode of 3.11 ($SD = .767$) on a 6-point Likert scale. Preservice teachers have low efficacy beliefs about their ability to educate students with ASD in inclusive classrooms; they do not feel prepared or trained.

Research Question 3

What are preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting?

Preservice teachers' efficacy beliefs about their ability to educate students with disabilities in an inclusive setting were measured using the TSES. The mean total TSES score was 7.16 with a mode of 7.17 ($SD = .982$) using a 9-point Likert scale. Preservice teachers have high efficacy beliefs about their ability to educate students with disabilities in the general education classroom.

Research Question 4

Does a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict preservice teachers' attitudes toward inclusion of students with ASD?

A significant equation ([dependent variable: ORI-ASD-Factor I] Multiple $R = .349$; $R^2 = .122$; Adjusted $R^2 = .114$; $F = 14.928$; Sig. = .000) was reported for the categorical regression analysis (CATREG) findings. Together, special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predicted 12.2% of the total variance in preservice teachers' attitudes toward inclusion of students with ASD. However, these variables predict a small amount of the total variance. Preservice teacher efficacy was the most important predictor of preservice teachers' attitudes toward inclusion of students with ASD, accounting for 7.2% of the total variance.

Discussion

My sample of preservice teachers was largely female (82.6%) and in their junior and/or senior year of college (54.4%). A majority of the preservice teacher sample (76.6%) were general education majors. The National Center for Educational Statistics (2013) indicates that these findings are representative of the field of education.

Approximately 76% of public school teachers are female; while 74% of private school teachers are female. Further, approximately 13% of teachers are licensed to teach special education. Thus, my data support this notion that most teachers in the field of education are predominately female general educators.

Considering research questions 1, 2, and 3, I found preservice teachers have a positive attitude towards inclusion of students with ASD into the general education classroom ($M = 4.52$). However, preservice teachers felt unprepared to do so ($M = 3.19$). Yet, when asked the same question regarding inclusion of students with disabilities, they responded more positively ($M = 7.16$). The conclusion is that these preservice teachers feel better prepared for inclusion of students with disabilities, as opposed to inclusion of students with ASD. There are several possible reasons that may explain these results. That is, preservice teachers may be interpreting the wording, ‘students with disabilities’, as meaning ‘students with mild disabilities’. Also, the results may reflect their unfamiliarity with ASD, a disability area they have not commonly encountered in the general classroom. When responding to the efficacy question regarding ASD, they may have been thinking about significant behavioral issues that sometimes accompany ASD. Further, preservice teachers believed a student with ASD will exhibit behavior problems in the general classroom ($M = 2.98$). Preservice teachers

may not believe they have the skills to manage the behavior problems of students with ASD.

However, my findings also show a few inconsistencies among preservice teachers' responses regarding their efficacy beliefs about their ability to educate students with ASD in an inclusive classroom. First, preservice teachers were relatively divided in their belief that they have the ability necessary to work with students with ASD.

Approximately 45% believed they did not have the ability necessary to work with students with ASD, while 55.4% believed they had the ability necessary for inclusion of students with ASD. With this being said, 72.7% believed they did not have sufficient training to teach students with ASD and 74.7% of preservice teachers believed they would need retraining. If preservice teachers' believed they had the ability necessary to work with students with ASD it is disconcerting that so many believed they do not have sufficient training and/or need retraining. It may be that preservice teachers are interpreting 'work with' as being different from 'teaching' student with ASD.

Approximately 90% of preservice teachers did not believe the behavior of students with ASD would set a bad example for students without disabilities; however, they did believe students with ASD would exhibit behavior problems within the general classroom (72.5%). So, it seems contradictory that preservice teachers believe students with ASD would cause behavior problems in the classroom but not set a bad example for students without disabilities. It may be that preservice teachers' are assuming students without disabilities are expected to act appropriately regardless of the behaviors exhibited by a student with ASD.

The research literature supports my findings that preservice teachers (Barned et al., 2011; Park et al., 2010) and teachers (McGregor & Campbell, 2001; Park & Chitiyo, 2011; Segall, 2008; Wilkerson, 2012) have positive attitudes toward inclusion of students with ASD and students with disabilities (Ahsan et al., 2012; Gao & Mager, 2011; Kim, 2011; Martin & Kudláček, 2010; Mayhew, 1994; Romi & Leyser, 2006). Despite having positive attitudes toward inclusion of students with ASD and disabilities, preservice teachers had concerns about inclusion of students with ASD (Barned et al., 2011; Park et al., 2010). These concerns possibly suggest a lack of confidence regarding inclusion of students with ASD.

Segall (2008) and Wilkerson (2012) reported positive teacher attitudes toward inclusion of students with ASD, but teachers reported a lack of knowledge of inclusionary practices. Thus, teachers and preservice teachers believe students with ASD should be educated in a general education setting, but do not feel prepared.

On the other hand, my study found that preservice teachers believe they are capable of educating students with disabilities within a general education setting. The research literature does not entirely support my findings in that Martin and Kudláček (2010) and Burke and Sutherland (2004) found preservice teachers did not feel competent in their level of knowledge for successful inclusion of students with disabilities. Romi and Leyser (2006) and Sharma et al. (2009) found that preservice teachers did not feel adequately prepared for managing behavior problems of students with disabilities. The difference in the findings may be explained by the fact that samples were from different countries. That is, my sample of preservice teachers was primarily from the Midwestern region of the United States. Martin and Kudláček's (2010) sample included Australian

preservice teachers; Sharma et al.'s (2009) sample included preservice teachers from India; Burke and Sutherland's (2004) sample included 30 preservice teachers from New York. Romi and Leyser's (2006) sample included preservice teachers from Israel. While preservice teachers' positive attitudes toward inclusion of students with ASD are promising, their responses about their ability to educate students with disabilities may reflect their lack of teaching experience for inclusion of students with ASD.

There were no studies regarding preservice teacher efficacy beliefs about their ability to include students with ASD in an inclusive setting; however, there were several teacher studies. Teachers believed they were capable of educating students with ASD within the general education setting (Busby et al., 2012; Morgan, 2013; Ruble et al., 2011; Siu & Ho, 2010; Taliaferro, 2010). Physical education teachers also felt capable of including students with ASD in the general classroom (Morgan, 2013; Taliaferro, 2010). High efficacy beliefs toward inclusion of students with ASD were also reported in Siu and Ho's (2010) study. General educators in Busby et al.'s (2012) study reported high efficacy beliefs toward inclusion of students with ASD; however, teachers believed they needed additional training to be truly effective. These findings differ from mine, possibly because these samples include teachers, rather than preservice teachers, and physical educators rather than general preservice teachers.

Authors have reported changes in teacher efficacy beliefs from the progression of preservice teacher to teachers. These studies focused on efficacy beliefs regarding their teaching ability, not regarding their efficacy beliefs about their ability to teach students with disabilities. With this being said, preservice teachers have consistently demonstrated a pattern of decreasing efficacy beliefs from preservice teacher to teacher

levels (Clark, 2009; Soodak & Podell, 1997; Woolfolk Hoy & Burke Spero, 2005).

Soodak and Podell (1997) reported relatively high efficacy beliefs of preservice teachers about their ability to educate students during fieldwork and student teaching; however, these efficacy beliefs significantly decreased during their first year of teaching (Soodak & Podell, 1997). My findings indicate low efficacy beliefs of preservice teachers about their ability to include students with ASD in the general classroom. Preservice teachers' pattern of decreasing efficacy beliefs about their ability to educate students (in general) coupled with my findings of low efficacy beliefs about their ability to educate students with ASD is problematic. If preservice teachers begin their teaching career with low efficacy beliefs about their ability to educate students with ASD, research suggests that these efficacy beliefs will continue to decrease.

In answer to Research Question 4, I found that a combination of special education coursework, preservice teacher experience with ASD, preservice teacher gender, and preservice teacher efficacy predict 12.2% of the total variance in preservice teachers' attitudes toward inclusion of students with ASD. Specifically, preservice teacher efficacy (toward inclusion of students with disabilities) was the most important predictor of preservice teachers' attitudes toward inclusion of students with ASD, predicting 7.2% of the total variance. When using the ORI-ASD Factor 2 (efficacy toward inclusion) to predict preservice teachers' attitudes toward inclusion of students with ASD, 35% of the total variance in preservice teachers' attitudes could be explained. More of the total variance can be explained through narrowing efficacy beliefs by the type of student disability: ASD. It can be concluded that preservice teacher efficacy beliefs toward their ability to educate students with disabilities is not a strong predictor of preservice

teachers' attitudes toward inclusion of students with ASD. It is likely that additional unidentified variable(s) are related to preservice teachers' attitudes toward inclusion of students with ASD.

My findings are similar to previous studies reporting a small percentage of preservice teacher variance explained by efficacy beliefs (3 to 15%) (Ahsan et al., 2012; Gao & Mager, 2011; Romi & Leyser, 2006). Similar to my study, teachers reported a lack of preparation and competence to implement inclusion for students with ASD (McGregor & Campbell, 2001; Wilkerson, 2012). This was further supported through research regarding inclusion of students with disabilities (Betancourt-Smith, 1994; Burke & Sutherland, 2004; Hammond & Ingalls, 2003; Hwang & Evans, 2011; Kwapy, 2004; Scruggs & Mastropieri, 1996; Sindelar, 1995).

My results suggest that preservice teacher gender is not a significant predictor of preservice teachers' attitudes toward inclusion of students with ASD; but female preservice teachers had significantly more positive attitudes ($M = 4.56$) than did males ($M = 4.34$). One study focused on preservice teacher gender differences in relation to inclusion of students with ASD. Park et al. (2010) reported more positive attitudes among female preservice teachers toward inclusion of students with ASD ($M = 4.57$) than did males ($M = 4.06$). Similar findings were evident in teacher studies; females had more positive attitudes toward inclusion of students with ASD than did males (Park & Chitiyo, 2011). Wilkerson (2012) did not find teacher attitude differences by gender toward inclusion of students with ASD. These studies included a large sample of female teachers (approximately 80%), and demographic information was comparable across

studies. The result differences could be attributed to sample sizes; Wilkerson (2012) had 636 teachers, while Park and Chitiyo (2011) included 127 teachers.

Preservice teacher gender differences are apparent toward inclusion of students with disabilities. Female preservice teachers have more positive attitudes toward inclusion of students with disabilities than do males (Garriott et al., 2003; Romi & Leyser, 2006). On the other hand, male preservice teachers had more positive attitudes ($M = 79.40$) than did female preservice teachers ($M = 73.64$) toward inclusion of students with disabilities in Jobe et al.'s (1996) study. Likewise, El-Ashry's (2009) reported more positive attitudes among male preservice teachers toward inclusion of students with disabilities in Egypt. While female preservice teachers tend to have more positive attitudes toward inclusion of students with ASD, it appears that males have more positive attitudes toward inclusion of students with disabilities.

Special education coursework was not a significant predictor for attitudes toward inclusion of students with ASD in my study; but, there were significant differences in preservice teachers' attitudes toward inclusion of students with ASD based upon course completion. Preservice teachers without special education coursework had a mean of 4.46, those with one special education course had a mean of 4.50, and teachers with five or more special education courses had the most positive attitudes toward inclusion of students with ASD ($M = 4.64$). These findings are supported by Park et al. (2010), who specifically focused on preservice teachers' attitudes toward inclusion of students with ASD, following special education coursework. Special education majors had more positive attitudes toward inclusion of students with ASD ($M = 4.40$) than did general education majors ($M = 3.93$). Further, several preservice teacher studies reported more

positive attitudes toward inclusion of students with disabilities following special education coursework (El-Ashry, 2009; Kim, 2011; Mayhew, 1994; Powers, 1992; Shade & Stewart, 2001; Shadreck, 2012; Shier, 2002; Swain et al., 2012). Thus, literature suggests special education coursework and ASD training increase preservice teacher's attitudes toward inclusion.

Similar results were found for teachers' attitudes toward inclusion of students with disabilities. Teachers with the highest levels of special education training had more positive attitudes toward inclusion (Bender et al., 1995; Elhoweris & Alsheikh, 2006; Jobe et al., 1996; Van Reusen et al., 2001).

My findings show that preservice teacher experience is related to preservice teachers' attitudes toward inclusion of students with ASD. While no preservice teacher studies were available on this topic, there was one teacher study. Special education teachers had more positive attitudes toward inclusion of students with ASD than did general education teachers (Wilkerson, 2012). Wilkerson (2012) attributed these findings to special education teachers' increased contact and experience with students with ASD.

My findings are supported through preservice teacher studies toward inclusion of students with disabilities. As preservice teachers gain experience, their attitudes toward inclusion of students with disabilities become more positive (Forlin et al., 2009; Hodge & Jansma, 1999; Kowalski & Rizzo, 1996). However, several studies did not entirely support my findings; Forlin and Chambers (2011) and Hastings and Oakford (2003) did not find a change in preservice teachers' attitudes toward inclusion based upon experience.

Conclusions

The current study aimed to examine preservice teachers' attitudes toward inclusion of students with ASD and their efficacy beliefs about their ability to educate students with ASD in inclusive settings. Five conclusions can be made based upon the findings from this study.

First, validation of the ORI-ASD scale, using best-practice procedures for exploratory factor analysis, resulted in a two-factor scale. ORI-ASD Factor I measured preservice teachers' attitudes toward inclusion of students with ASD while ORI-ASD Factor II measured preservice teachers' efficacy beliefs about their ability to educate students with ASD in inclusive settings. This finding is important because Antonak and Larrivee (1995) recommend using the total ORI score to measure teachers' attitudes toward inclusion but made no recommendation for preservice teachers. My findings suggest use of the total ORI score would give an incomplete picture of preservice teachers' attitudes toward inclusion. Romi and Leyser (2006) recognized this issue and chose to measure preservice teachers' attitudes toward inclusion with ORI Factor I instead of the total ORI. The use of the ORI-ASD Factor I in this study could be regarded as a purer measure of preservice teachers' attitudes toward inclusion of students with ASD because it included all of Antonak and Larrivee's (1995) ORI Factor I items plus five additional ORI items.

Second, validation of the TSES scale using best-practice procedures for exploratory factor analysis resulted in a one-factor scale which supports the original factor structure for preservice teachers by Tschannen-Moran and Woolfolk Hoy (2001) and Fives and Buehl (2010). The TSES was established as a measure of preservice

teachers' efficacy beliefs about their ability to educate students with disabilities in the general classroom.

Third, preservice teachers' have positive attitudes toward inclusion of students with ASD. Item responses on the ORI-ASD advocate for students with ASD to be included within the general education classroom. The item responses show preservice teachers believe that inclusion of students with ASD would provide more understanding and acceptance among all students within the general education classroom.

Fourth, preservice teachers have low efficacy beliefs about their ability to educate students with ASD in the general education classroom. Item responses on the ORI-ASD Factor II highlight several areas of preservice teacher concern: (a) preservice teachers voiced concerns and apprehension about their belief in their ability to educate students with ASD in an inclusive classroom; (b) preservice teachers did not feel sufficiently trained for inclusion of students with ASD; (c) preservice teachers believed inclusion of students with ASD would require extensive retraining, classroom changes, and more patience; and (d) preservice teachers believed they would need help with behavior management. One can conclude that although preservice teachers agree that students should be educated in the regular classroom they don't believe they are ready to include these students.

Fifth, although correlation coefficients are significantly different from 0, they are very small correlations and represent small effect sizes: special education coursework (effect size = .01), preservice teacher experience with ASD (effect size = .04), preservice teacher gender (effect size = .01), and preservice teacher efficacy toward their ability to educate students with disabilities in an inclusive classroom (effect size = .06) and toward

their ability to educate students with ASD in an inclusive classroom (effect size = .35). Preservice teacher efficacy was the most important predictor variable for preservice teachers' attitudes toward inclusion of students with ASD. However, preservice teacher efficacy about their ability to educate students with disabilities explained only 7.2% of the total variance in preservice teachers' attitudes toward inclusion of students with ASD, leaving much of the total variance unexplained. Preservice teacher efficacy toward their ability to educate students with ASD explained much more of the variance (35%) in preservice teachers' attitudes toward inclusion of students with ASD. Thus, efficacy on the TSES scale is measuring preservice teachers' beliefs about their ability to educate students with disabilities in an inclusive classroom. This measure of efficacy appears to be different from the efficacy construct measured on the ORI-ASD Factor 2, preservice teachers' beliefs in their ability to educate students with ASD in an inclusive classroom. Each scale measures a different construct of preservice teacher efficacy. The ORI-ASD Factor 2 was able to explain a larger portion of preservice teachers' efficacy beliefs toward inclusion of students with ASD. However, it must also be considered that this higher percentage of total variance explained may be a statistical artifact.

Implications of the Study

Teacher attitudes toward inclusion of students with disabilities have been largely measured by item responses from Antonak and Larrivee's (1995) ORI four-factor scale. This study identified a two-factor ORI-ASD scale with 13 items measuring preservice teacher attitudes toward inclusion of students with ASD and nine items measuring preservice teachers' efficacy beliefs about their ability to educate students with ASD in an inclusive setting. Thus, the results of this study focus specifically on preservice

teachers' attitudes and efficacy beliefs toward inclusion of students with ASD whereas the ORI measured preservice teachers' attitudes toward inclusion of students with disabilities.

The findings from my study extend literature regarding preservice teachers' attitudes and efficacy beliefs about their ability to educate students with ASD and disabilities in a general education setting. These findings are important for teachers, school service personnel, and administrators because they imply that teacher training programs need to better prepare preservice teachers to successfully integrate students with ASD into the general education classroom.

Additionally, preservice teacher experience with ASD, preservice teachers' gender, special education coursework, and preservice teacher efficacy were identified as predictors of preservice teachers' attitudes toward inclusion of students with ASD. These variables were able to predict only a small percentage of the total variance; therefore, they can be eliminated as significant predictors of preservice teachers' attitudes toward inclusion of students with ASD. It will be important to look at additional variables to help identify predictors of preservice teachers' attitudes toward inclusion of students with ASD and other disability categories.

Finally, a review of qualitative data from the comment/concern section of the online survey revealed a common theme among preservice teachers regarding the structure of the survey; that is, 27% wanted ASD separated into two categories: Asperger's syndrome and autism. Preservice teachers suggested this separation would have influenced their responses and thus their attitudes and efficacy beliefs. This may have affected preservice teachers' completion of the online survey.

Limitations

There were several limitations to my study. First, I was not able to gather data on the number of preservice teachers who received the survey and responded, versus those who received the survey and did not respond. As such, it is difficult to determine the representativeness of my sample. I can only assume my study was representative of the preservice teachers from the Midwestern United States based upon the large response and rate of response from each school. The second limitation of the study may have resulted from the use of self-reports. Self-report measures have been criticized for activating a social desirability bias; the respondent provides an answer that will be viewed favorably by the researcher. Preservice teachers may have rated themselves more favorably on this survey resulting in differences between actual and perceived performance.

A final limitation resulted from researcher error. The TSES scale was not adapted within the study to measure preservice teachers' efficacy beliefs about their ability to educate students with ASD. Thus, the TSES was a measure of preservice teachers' efficacy beliefs about their ability to educate students with disabilities, rather than ASD.

Suggestions for Further Research

These findings suggest further examination of the ORI scale to evaluate its psychometric properties. Several ORI items had low communalities, suggesting that these items added little to the solution. Specifically, a confirmatory factor analysis of the questionnaire could result in deletion or addition of new items focusing on attitudes toward inclusion.

Additional demographic variables should be investigated as possible predictors of preservice teachers' attitudes toward inclusion of students with ASD. The demographic

variables within this study had small effect sizes and did not explain a large portion of the variance in preservice teachers' attitudes toward inclusion of students with ASD. It is apparent that additional variables contribute to preservice teachers' attitudes toward inclusion of students with ASD, but were not evident within this study.

Continued research should be completed in the area of preservice teacher efficacy beliefs about their ability to educate students with ASD in an inclusive setting. Preservice teachers within this study had high efficacy beliefs about their abilities to educate students with disabilities in an inclusive setting; but these efficacy beliefs were significantly lower for inclusion of students with ASD. This demonstrates differences in efficacy beliefs among preservice teachers based upon student disability. Efficacy beliefs may vary across disability categories.

Additionally, it would be important to measure teachers' attitudes toward inclusion of students with ASD to determine if there are changes in attitudes and efficacy beliefs from the progression of preservice teachers to teachers. The four available research studies regarding teachers' attitudes toward inclusion of students with ASD have weaknesses. For example, McGregor and Campbell (2001) used a single survey question to measure teachers' attitudes toward inclusion of students with ASD. Further, Park and Chitiyo (2011) used a nearly 30-year-old scale to measure teacher attitudes.

A confirmatory analysis should be completed to verify the factor structure of the ORI-ASD for use with preservice teachers' attitudes toward inclusion of students with ASD. The factor structure of the ORI may differ based upon what disability area is being measured as well as across samples of preservice teachers and teachers.

Summary

In summary, the purpose of this study was to examine preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive setting. The study contributed to data pertaining to ORI and TSES validity and reliability. The ORI-ASD measures a much smaller aspect of teachers' attitudes toward inclusion of students with ASD (13 of the 25 ORI-ASD items) than what was identified for inclusion of students with disabilities (25 ORI items). The ORI-ASD contained nine items which focused on preservice teachers' efficacy beliefs about their ability to educate students with ASD.

This study also provides a foundation for research regarding preservice teachers' attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in inclusive settings. Preservice teachers have positive attitudes toward inclusion of students with ASD within the general education classroom. Preservice teachers have high efficacy beliefs about their ability to educate students with disabilities in the general setting; however, teachers have low efficacy beliefs about their ability to educate students with ASD in inclusive settings. From this, we can conclude that preservice teachers have positive attitudes toward inclusion of students with ASD in the general education classroom but do not feel properly trained.

These findings may help trainers of teacher programs realize the importance of preservice teacher attitudes toward inclusion of students with ASD and efficacy beliefs about their ability to educate students with ASD in an inclusive setting.

APPENDIX A

LETTERS TO SCHOOL OFFICIALS

Date:

Dear Dean of the Education Department,

My name is Amy Cramer and I am a doctoral candidate at Andrews University in Berrien Springs Michigan. For my dissertation study, I am investigating preservice teacher views on inclusion of students with Autism Spectrum Disorders in the general education classroom. The information collected is important for furthering teacher training programs. It will provide avenues for effective training and for ensuring quality of services for students with Autism Spectrum Disorders.

I am requesting your assistance in compiling data concerning my doctoral research. I would be grateful if you would agree to participate in my research. Participation involves forwarding an email attachment with a link to an online survey to all the students within your teacher training program (early childhood, elementary, secondary, middle school, high school, and special education students). The survey should take no longer than 15 minutes. It is my hope that you will be willing to take a few minutes out of your busy day to forward this link on to the students within your program. Your help will be much appreciated!

If you would be willing to participate, please respond to this email (Amy.Cramer@yahoo.com). If you could, please give an estimate of how many students are enrolled within your teacher training program. Upon responding, I will send you another email with an attachment explaining the nature of the study to the students and a link to my online survey to be forwarded to the students within your teacher education program. If you could, please respond by March 15, 2010.

I am including the email attachment to be used within the study to this email as well for your review. This will enable you to view exactly what I will be asking the students and give you an opportunity to preview the online survey.

This study has been approved by the Institutional Review Board of Andrews University. Additionally, if you should have any questions, you may contact me at the email address or telephone number listed below; or my advisor, Dr. Elvin Gabriel at email address Gabriel@andrews.edu.

Sincerely,

Amy Cramer, Ed.S.

Phone: 219-464-6294

Email: Amy.Cramer@yahoo.com

Date:

Dear Chair of the Education Department,

My name is Amy Cramer and I am a doctoral candidate at Andrews University in Berrien Springs Michigan. For my dissertation study, I am investigating preservice teacher views on inclusion of students with Autism Spectrum Disorders in the general education classroom. The information collected is important for furthering teacher training programs. It will provide avenues for effective training and for ensuring quality of services for students with Autism Spectrum Disorders.

I am requesting your assistance in compiling data concerning my doctoral research. I would be grateful if you would agree to participate in my research. Participation involves forwarding an email attachment with a link to an online survey to all the students within your teacher training program (early childhood, elementary, secondary, middle school, high school, and special education students). The survey should take no longer than 15 minutes. It is my hope that you will be willing to take a few minutes out of your busy day to forward this link on to the students within your program. Your help will be much appreciated!

If you would be willing to participate, please respond to this email (Amy.Cramer@yahoo.com). If you could, please give an estimate of how many students are enrolled within your teacher training program. Upon responding, I will send you another email with an attachment explaining the nature of the study to the students and a link to my online survey to be forwarded to the students within your teacher education program. If you could, please respond by March 15, 2010.

I am including the email attachment to be used within the study to this email as well for your review. This will enable you to view exactly what I will be asking the students and give you an opportunity to preview the online survey.

This study has been approved by the Institutional Review Board of Andrews University. Additionally, if you should have any questions, you may contact me at the email address or telephone number listed below; or my advisor, Dr. Elvin Gabriel at email address Gabriel@andrews.edu.

Sincerely,

Amy Cramer, Ed.S.

Phone: 219-464-6294

Email: Amy.Cramer@yahoo.com

Date:

Dear Professor of Education,

My name is Amy Cramer and I am a doctoral candidate at Andrews University in Berrien Springs Michigan. For my dissertation study, I am investigating preservice teacher views on inclusion of students with Autism Spectrum Disorders in the general education classroom. The information collected is important for furthering teacher training programs. It will provide avenues for effective training and for ensuring quality of services for students with Autism Spectrum Disorders.

I am requesting your assistance in compiling data concerning my doctoral research. I would be grateful if you would agree to participate in my research. Participation involves forwarding an email attachment with a link to an online survey to all the students within your teacher training program (early childhood, elementary, secondary, middle school, high school, and special education students). The survey should take no longer than 15 minutes. It is my hope that you will be willing to take a few minutes out of your busy day to forward this link on to the students within your program. Your help will be much appreciated!

If you would be willing to participate, please respond to this email (Amy.Cramer@yahoo.com). If you could, please give an estimate of how many students are enrolled within your teacher training program. Upon responding, I will send you another email with an attachment explaining the nature of the study to the students and a link to my online survey to be forwarded to the students within your teacher education program. If you could, please respond by March 15, 2010.

I am including the email attachment to be used within the study to this email as well for your review. This will enable you to view exactly what I will be asking the students and give you an opportunity to preview the online survey.

This study has been approved by the Institutional Review Board of Andrews University. Additionally, if you should have any questions, you may contact me at the email address or telephone number listed below; or my advisor, Dr. Elvin Gabriel at email address Gabriel@andrews.edu.

Sincerely,

Amy Cramer, Ed.S.

Phone: 219-464-6294

Email: Amy.Cramer@yahoo.com

APPENDIX B

LETTERS TO PRESERVICE TEACHERS

PRESERVICE TEACHER LETTER - PILOT STUDY

Date:

Dear Preservice teacher,

You have been selected as part of a sample of preservice teachers to participate in a study investigating views on inclusion of students with Autism Spectrum Disorders in the general education classroom. Participation involves completing some questions in an on-line survey. The information collected is important for furthering teacher training programs. It will provide avenues for effective teacher training and for ensuring quality of services for students with Autism Spectrum Disorders.

This study is being conducted as part of my doctoral dissertation, so your participation will be much appreciated. In recognition of the fact that your time is valuable and your participation is fully voluntary, each participant will have the opportunity to be entered into a drawing to receive one of two \$25.00 gift certificates to Target. If you would like to be entered to receive a gift certificate to Target, there is a space to include your email address at the end of the survey. Those who enter their email address will be placed into the drawing. Names will be drawn randomly and winners will be notified via email.

To be a part of this study, please click on the link below (or cut and paste the link below into your web browser):

<http://www.surveymonkey.com/s/8T2NGSG>

Completion of the questionnaire should take no more than 15 minutes, and your responses will be kept confidential. If portions of this study are published, the researcher will not include any information that will make it possible to identify you. If you decide to participate within the study, please complete the online questionnaire by February 28, 2010. It would also be appreciated if you would be willing to participate within a focus group answering likes and dislikes of the survey. These groups are open to everyone (but not mandatory). The dates are as follows: March 15 (Monday from 3-4pm), March 16 (Tuesday from 3-4), and March 18 (Thursday 5-6).

This study has been approved by the Institutional Review Board of Valparaiso University. Additionally, if you should have any questions, feel free to contact me at either the email address or telephone number listed below. Again, should you decide to participate, please respond by February 28, 2010. Thank you for your willingness to be a part of this study, and good luck on winning one of the gift certificates!

Sincerely,

Amy Cramer, Ed.S.

Phone: 219-464-6294

Email: Amy.Cramer@yahoo.com

PRESERVICE TEACHER FOLLOW-UP LETTER - PILOT STUDY

Date:

Dear Preservice teacher,

A week ago, you were sent an email invitation to participate within my research study investigating views on inclusion of students with Autism Spectrum Disorders in the general education classroom. If you have already completed the online survey, I would like to thank you for your time.

If you have not yet completed an online survey, I would like to remind you that there is still time to participate within this study! Participation involves completing some questions in an on-line survey. The information collected is important for furthering teacher training programs. It will provide avenues for effective teacher training and for ensuring quality of services for students with Autism Spectrum Disorders.

This study is being conducted as part of my doctoral dissertation, so your participation will be much appreciated. In recognition of the fact that your time is valuable and your participation is fully voluntary, each participant will have the opportunity to be entered into a drawing to receive one of two \$25.00 gift certificates to Target. If you would like to be entered to receive a gift certificate to Target, there is a space to include your email address at the end of the survey. Those who enter their email address will be placed into the drawing. Names will be drawn randomly and winners will be notified via email.

To be a part of this study, please click on the link below (or cut and paste the link below into your web browser):

<http://www.surveymonkey.com/s/8T2NGSG>

Completion of the questionnaire should take no more than 15 minutes, and your responses will be kept confidential. If portions of this study are published, the researcher will not include any information that will make it possible to identify you. If you decide to participate within the study, please complete the online questionnaire by February 28, 2010. It would also be appreciated if you would be willing to participate within a focus group answering likes and dislikes of the survey. These groups are open to everyone (but not mandatory). The dates are as follows: March 15 (Monday from 3-4pm), March 16 (Tuesday from 3-4), and March 18 (Thursday 5-6).

This study has been approved by the Institutional Review Board of Valparaiso University. Additionally, if you should have any questions, feel free to contact me at either the email address or telephone number listed below. Again, should you decide to participate, please respond by February 28, 2010. Thank you for your willingness to be a part of this study, and good luck on winning one of the gift certificates!

Sincerely,

Amy Cramer, Ed.S.
Phone: 219-464-6294
Email: Amy.Cramer@yahoo.com

PRESERVICE TEACHER LETTER

Date:

Dear Preservice teacher,

You have been selected as part of a sample of preservice teachers to participate in a study investigating views on inclusion of students with Autism Spectrum Disorders in the general education classroom. Participation involves completing some questions in an on-line survey. The information collected is important for furthering teacher training programs. It will provide avenues for effective teacher training and for ensuring quality of services for students with Autism Spectrum Disorders.

This study is being conducted as part of my doctoral dissertation, so your participation will be much appreciated. In recognition of the fact that your time is valuable and your participation is fully voluntary, each participant will have the opportunity to receive one of eight \$50.00 gift certificates to Target. If you would like to be entered to receive a gift certificate to Target, there is a space to include your email address at the end of the survey. Those who enter their email address will be placed into the drawing. Names will be drawn randomly and winners will be notified via email.

To be a part of this study, please cut and past the link below into your web browser:

http://www.surveymonkey.com/s.aspx?sm=FNIRIwpa3KTcpx13NyWX0g_3d_3d

Completion of the questionnaire should take no more than 15 minutes, and your responses will be kept confidential. If portions of this study are published, the researcher will not include any information that will make it possible to identify you. If you decide to participate within the study, please complete the online questionnaire by April 20, 2010.

This study has been approved by the Institutional Review Board of Andrews University. Additionally, if you should have any questions, feel free to contact me at either the email address or telephone number listed below or my advisor, Elvin Gabriel, at Gabriel@andrews.edu. Again, should you decide to participate, please respond by April 20, 2010. Thank you for your willingness to be a part of this study, and good luck on winning one of the gift certificates!

Sincerely,

Amy Cramer, Ed.S.

Phone: 219-464-6294

Email: Amy.Cramer@yahoo.com

APPENDIX C

SURVEYS

PRESERVICE TEACHER SURVEY – PILOT STUDY

1. Informed Consent

You are being asked to participate in a research study about attitudes toward inclusion of students with Autism Spectrum Disorders and teacher efficacy. This research study will be completed through an online survey.

This research study is being conducted by Amy Cramer, and Educational Psychology student at Andrews University in Berrien Springs Michigan. The research study aims to identify preservice teacher attitudes towards inclusion of students with Autism Spectrum Disorders and related factors. Previous research has broadly focused on students with disabilities without differentiation of the 13 disability categories as listed in the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA). By understanding the factors that influence preservice teacher attitudes, teacher preparation programs may be able to use this information to better prepare teachers for students with exceptionalities, particularly ASD within the classrooms.

You are being asked to participate because you are in a teacher training program pursuing an education degree. The online survey will take no longer than 15 minutes to complete. If you decide to participate within the study, please complete the online questionnaire by February 28, 2010.

The information collected may not benefit you directly, but the information learned is vital for furthering teacher training research. This research will provide avenues for effective teacher training and for ensuring quality of services for students with Autism Spectrum Disorders.

There are no known risks if you decide to participate in this research study. In the event that you experience stress or anxiety during your participation in the study, you may terminate your participation at any time.

There is no compensation for participating within this research study. But, by completing this survey, you will be eligible to win one of two gift certificates to Target worth \$25.00.

This survey is anonymous. The survey is web-based and is completed through SurveyMonkey; therefore no IP addresses can be gathered by the researcher. Should the data be published, no individual information will be disclosed.

If you have any questions regarding this study, please contact Amy Cramer via email at Amy.Cramer@yahoo.com or by phone, 219-464-6294.

Your participation in this study is strictly voluntary. Your decision whether or not to participate will not affect your current or future relations with the institution in which you are a student. If you initially decide to participate, you are still free to withdraw at any time later without affecting those relationships.

***I certify that I have read and understand this consent form and agree to participate as a subject in the research described. I agree that known risks to me have been explained to my satisfaction and I understand that no compensation is available from Valparaiso University and its employees for any injury resulting from my participation in this research. I certify that I am 18 years of age or older. My participation in this research is given voluntarily. I understand that I may discontinue participation at any time without penalty or loss of any benefits to which I may otherwise be entitled. By completing the online questionnaire, I am voluntarily agreeing to participate. I acknowledge that I am able to print this copy of the consent form for my records.**

- ☐ **I AGREE to participate**
- ☐ **I DO NOT agree to participate**

SURVEY:

I. General Directions

This survey asks you about Autism Spectrum Disorders. Autism Spectrum Disorders include: Autism, Asperger's Disorder, Rett's Disorder, Childhood Disintegrative Disorder, and Pervasive Developmental Disorder.

Please mark the number below each item that best describes your agreement or disagreement with the statement. There are no correct answers: the best answers are those that honestly reflect your feelings. There is no time limit, but you should work as quickly as you can.

Scale adapted from:

Antonak, R. F. & Larrivee, B. (1995). Psychometric analysis and revision of the Opinions Relative to Mainstreaming Scale. *Exceptional Children*, 62 (2), 139-149.

II. ORI Questions

1. Most students with Autism Spectrum Disorders will make an adequate attempt to complete their assignments.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

2. Inclusion of students with Autism Spectrum Disorders will necessitate extensive retraining of general-classroom teachers.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

3. Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

4. It is likely that the student with an Autism Spectrum Disorder will exhibit behavior problems in a general classroom.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

5. Students with Autism Spectrum Disorders can best be served in general classrooms.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

6. The extra attention students with Autism Spectrum Disorders require will be to the detriment of the other students.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

7. The challenge of being in a general education classroom will promote the academic growth of the student with an Autism Spectrum Disorder.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

89. Inclusion of students with Autism Spectrum Disorders will require significant changes in general classroom procedures.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

9. Increased freedom in the general classroom creates too much confusion for the student with an Autism Spectrum Disorder.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

10. General-classroom teachers have the ability necessary to work with students with Autism Spectrum Disorders.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

11. The presence of students with Autism Spectrum Disorders will not promote acceptance of differences on the part of students without disabilities.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

12. The behavior of students with Autism Spectrum Disorders will set a bad example for students without disabilities.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

13. The student with an Autism Spectrum Disorder will probably develop academic skills more rapidly in a general classroom than in a special classroom.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

14. Inclusion of the student with an Autism Spectrum Disorder will not promote his or her social independence.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

15. It is not more difficult to maintain order in a general classroom that contains a student with an Autism Spectrum Disorder than in one that does not contain a student with a disability.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

16. Students with Autism Spectrum Disorders will not monopolize the general-classroom teacher's time.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

17. The Inclusion of students with Autism Spectrum Disorders can be beneficial for students without disabilities.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

18. Students with Autism Spectrum Disorders are likely to create confusion in the general classroom.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

19. General-classroom teachers have sufficient training to teach students with Autism Spectrum Disorders.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

20. Inclusion will likely have a negative effect on the emotional development of the student with an Autism Spectrum Disorder.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

21. Students with Autism Spectrum Disorders should be given every opportunity to function in the general classroom where possible.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

22. The classroom behavior of the student with an Autism Spectrum Disorder generally does not require more patience from the teacher than does the classroom behavior of the student without a disability.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

23. Teaching students with Autism Spectrum Disorders is better done by special – than general-classroom teachers.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

24. Isolation in a special classroom has a beneficial effect on the social and emotional development of the student with an Autism Spectrum Disorder.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

25. The student with an Autism Spectrum Disorder will not be socially isolated in the general classroom.

- ☐ 0: I don't know
- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

III. General Directions - TSES

Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns below each item, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

Scale used:

Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.

1. How much can you do to get through to the most difficult students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

2. How much can you do to help your students think critically?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

3. How much can you do to control disruptive behavior in the classroom?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

4. How much can you do to motivate students who show low interest in school work?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

5. To what extent can you make your expectations clear about student behavior?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

6. How much can you do to get students to believe they can do well in school work?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

7. How well can you respond to difficult questions from your students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

8. How well can you establish routines to keep activities running smoothly?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

9. How much can you do to help your students' value learning?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

10. How much can you gauge student comprehension of what you have taught?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

11. To what extent can you craft good questions for your students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

12. How much can you do to foster student creativity?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

13. How much can you do to get children to follow classroom rules?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

14. How much can you do to improve the understanding of a student who is failing?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

15. How much can you do to calm a student who is disruptive or noisy?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

16. How well can you establish a classroom management system with each group of students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

17. How much can you do to adjust your lessons to the proper level for individual students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

18. How much can you use a variety of assessment strategies?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

19. How well can you keep a few problem students from ruining an entire lesson?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

20. To what extent can you provide an alternative explanation or example when students are confused?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

21. How well can you respond to defiant students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

22. How much can you assist families in helping their children do well in school?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

23. How well can you implement alternative strategies in your classroom?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

24. How well can you provide appropriate challenges for very capable students?

- ☐ 0: I don't know
- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

IV. Demographic Items

1. What is your age?

- ☐ 18
- ☐ 19
- ☐ 20
- ☐ 21
- ☐ 22
- ☐ 23+

2. Sex

- ☐ Male
- ☐ Female

3. What is your educational level?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Fifth Year Senior
- ☐ Other

4. What is your expected area of degree/licensure? (Check all that apply)

- ☐ General Education Elementary
- ☐ General Education Middle School
- ☐ General Education High School
- ☐ Special Education
- ☐ Early Childhood

5. How many special education classes have you completed?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five
- ☐ More than five

6. How much experience do you have working with individuals with Autism Spectrum Disorders OUTSIDE of the classroom?

- ☐ None
- ☐ Acquaintance (neighbor)
- ☐ Casual (co-worker)
- ☐ Intimate (sibling, significant other)

7. What state is your school located?

- ☐ Illinois
- ☐ Indiana
- ☐ Iowa
- ☐ Kansas
- ☐ Michigan
- ☐ Minnesota
- ☐ Missouri
- ☐ Nebraska
- ☐ North Dakota
- ☐ Ohio
- ☐ Oklahoma
- ☐ South Dakota
- ☐ Wisconsin

8. Is your college/university public or private?

- ☐ Public
- ☐ Private

IV. Survey Feedback

9. What questions did you find confusing/unclear within the survey?

10. Where there any questions you found to be invasive/offensive within the survey?

11. Do you have a good understanding of Autism Spectrum Disorders? Rate your understanding on a scale from 1-9.

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

12. Do you have a good understanding of Teacher Efficacy? Rate your understanding on a scale from 1-9.

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

13. How would you change this survey? What suggestions can you offer?

V. Gift certificate

Thank you for your cooperation in completing this survey.

If you would like to be entered to win one of two Target gift certificates for \$25.00 each, please enter your email address below so you can be notified.

This is optional! If you do not feel comfortable entering your email address you do not need to complete this item and thus will not be entered in the drawing. Remember, should the data be published, no individual information will be disclosed.

Email address: _____

PRESERVICE TEACHER SURVEY

1. Informed Consent

You are being asked to participate in a research study about attitudes toward inclusion of students with Autism Spectrum Disorders and teacher efficacy. This research study will be completed through an online survey.

This research study is being conducted by Amy Cramer, and Educational Psychology student at Andrews University in Berrien Springs Michigan. The research study aims to identify preservice teacher attitudes towards inclusion of students with Autism Spectrum Disorders and related factors. Previous research has broadly focused on students with disabilities without differentiation of the 13 disability categories as listed in the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA). By understanding the factors that influence preservice teacher attitudes, teacher preparation programs may be able to use this information to better prepare teachers for students with exceptionalities, particularly ASD within the classrooms.

You are being asked to participate because you are in a teacher training program pursuing an education degree. The online survey will take no longer than 15 minutes to complete. If you decide to participate within the study, please complete the online questionnaire by April 20, 2010.

The information collected may not benefit you directly, but the information learned is vital for furthering teacher training research. This research will provide avenues for effective teacher training and for ensuring quality of services for students with Autism Spectrum Disorders.

There are no known risks if you decide to participate in this research study. In the event that you experience stress or anxiety during your participation in the study, you may terminate your participation at any time.

There is no compensation for participating within this research study. But, by completing this survey, you will be eligible to win one of sixteen gift certificates to Target worth \$25.00.

This survey is anonymous. The survey is web-based and is completed through SurveyMonkey; therefore no IP addresses can be gathered by the researcher. Should the data be published, no individual information will be disclosed.

If you have any questions regarding this study, please contact Amy Cramer via email at Amy.Cramer@yahoo.com or by phone, 219-464-6294. The researcher's faculty advisor is Dr. Elvin Gabriel, Associate Professor of Educational Counseling Psychology, and he may be reached via email at Gabriel@andrews.edu or by phone, 269-471-6223.

Your participation in this study is strictly voluntary. Your decision whether or not to participate will not affect your current or future relations with the institution in which you

are a student. If you initially decide to participate, you are still free to withdraw at any time later without affecting those relationships.

***I certify that I have read and understand this consent form and agree to participate as a subject in the research described. I agree that known risks to me have been explained to my satisfaction and I understand that no compensation is available from Andrews University and its employees for any injury resulting from my participation in this research. I certify that I am 18 years of age or older. My participation in this research is given voluntarily. I understand that I may discontinue participation at any time without penalty or loss of any benefits to which I may otherwise be entitled. By completing the online questionnaire, I am voluntarily agreeing to participate. I acknowledge that I am able to print this copy of the consent form for my records.**

- ☐ **I AGREE to participate**
- ☐ **I DO NOT agree to participate**

I. General Directions

This survey asks you about Autism Spectrum Disorders. Autism Spectrum Disorders include: Autism, Asperger's Disorder, Rett's Disorder, Childhood Disintegrative Disorder, and Pervasive Developmental Disorder.

Please mark the number below each item that best describes your agreement or disagreement with the statement. There are no correct answers: the best answers are those that honestly reflect your feelings. There is no time limit, but you should work as quickly as you can.

Scale adapted from:

Antonak, R. F. & Larrivee, B. (1995). Psychometric analysis and revision of the Opinions Relative to Mainstreaming Scale. *Exceptional Children*, 62 (2), 139-149.

II. ORI Questions

1. Most students with Autism Spectrum Disorders will make an adequate attempt to complete their assignments.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

2. Inclusion of students with Autism Spectrum Disorders will necessitate extensive retraining of general-classroom teachers.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

3. Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

4. It is likely that the student with an Autism Spectrum Disorder will exhibit behavior problems in a general classroom.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

5. Students with Autism Spectrum Disorders can best be served in general classrooms.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

6. The extra attention students with Autism Spectrum Disorders require will be to the detriment of the other students.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

7. The challenge of being in a general education classroom will promote the academic growth of the student with an Autism Spectrum Disorder.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

8. Inclusion of students with Autism Spectrum Disorders will require significant changes in general classroom procedures.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

9. Increased freedom in the general classroom creates too much confusion for the student with an Autism Spectrum Disorder.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

10. General-classroom teachers have the ability necessary to work with students with Autism Spectrum Disorders.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

11. The presence of students with Autism Spectrum Disorders will not promote acceptance of differences on the part of students without disabilities.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

12. The behavior of students with Autism Spectrum Disorders will set a bad example for students without disabilities.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

13. The student with an Autism Spectrum Disorder will probably develop academic skills more rapidly in a general classroom than in a special classroom.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

14. Inclusion of the student with an Autism Spectrum Disorder will not promote his or her social independence.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

15. It is not more difficult to maintain order in a general classroom that contains a student with an Autism Spectrum Disorder than in one that does not contain a student with a disability.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

16. Students with Autism Spectrum Disorders will not monopolize the general-classroom teacher's time.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

17. The Inclusion of students with Autism Spectrum Disorders can be beneficial for students without disabilities.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

18. Students with Autism Spectrum Disorders are likely to create confusion in the general classroom.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

19. General-classroom teachers have sufficient training to teach students with Autism Spectrum Disorders.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

20. Inclusion will likely have a negative effect on the emotional development of the student with an Autism Spectrum Disorder.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

21. Students with Autism Spectrum Disorders should be given every opportunity to function in the general classroom where possible.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

22. The classroom behavior of the student with an Autism Spectrum Disorder generally does not require more patience from the teacher than does the classroom behavior of the student without a disability.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

23. Teaching students with Autism Spectrum Disorders is better done by special – than general-classroom teachers.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

24. Isolation in a special classroom has a beneficial effect on the social and emotional development of the student with an Autism Spectrum Disorder.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

25. The student with an Autism Spectrum Disorder will not be socially isolated in the general classroom.

- ☐ 1: I disagree very much
- ☐ 2: I disagree pretty much
- ☐ 3: I disagree a little
- ☐ 4: I agree a little
- ☐ 5: I agree pretty much
- ☐ 6: I agree very much

III. General Directions - TSES

Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns below each item, ranging from (1) “None at all” to (9) “A Great Deal” as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

Scale used:

Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.

1. How much can you do to get through to the most difficult students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

2. How much can you do to help your students think critically?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

3. How much can you do to control disruptive behavior in the classroom?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

4. How much can you do to motivate students who show low interest in school work?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

5. To what extent can you make your expectations clear about student behavior?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

6. How much can you do to get students to believe they can do well in school work?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

7. How well can you respond to difficult questions from your students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

8. How well can you establish routines to keep activities running smoothly?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

9. How much can you do to help your students' value learning?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

10. How much can you gauge student comprehension of what you have taught?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

11. To what extent can you craft good questions for your students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

12. How much can you do to foster student creativity?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

13. How much can you do to get children to follow classroom rules?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

14. How much can you do to improve the understanding of a student who is failing?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

15. How much can you do to calm a student who is disruptive or noisy?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

16. How well can you establish a classroom management system with each group of students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

17. How much can you do to adjust your lessons to the proper level for individual students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

18. How much can you use a variety of assessment strategies?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

19. How well can you keep a few problem students from ruining an entire lesson?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

20. To what extent can you provide an alternative explanation or example when students are confused?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

21. How well can you respond to defiant students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

22. How much can you assist families in helping their children do well in school?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

23. How well can you implement alternative strategies in your classroom?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

24. How well can you provide appropriate challenges for very capable students?

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

IV: Demographic Items

1. What is your age?

- ☐ 18
- ☐ 19
- ☐ 20
- ☐ 21
- ☐ 22
- ☐ 23+

2. Sex

- ☐ Male
- ☐ Female

3. What is your educational level?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Fifth Year Senior
- ☐ Other

4. What is your expected area of degree/licensure? (Check all that apply)

- ☐ General Education Elementary
- ☐ General Education Middle School
- ☐ General Education High School
- ☐ Special Education
- ☐ Early Childhood

5. How many special education classes have you completed?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five
- ☐ More than five

6. How much experience do you have working with individuals with Autism Spectrum Disorders OUTSIDE of the classroom?

- ☐ None
- ☐ Acquaintance (neighbor)
- ☐ Casual (co-worker)
- ☐ Intimate (sibling, significant other)

7. What state is your school located?

- ☐ Illinois
- ☐ Indiana
- ☐ Iowa
- ☐ Kansas
- ☐ Michigan
- ☐ Minnesota
- ☐ Missouri
- ☐ Nebraska
- ☐ North Dakota
- ☐ Ohio
- ☐ Oklahoma
- ☐ South Dakota
- ☐ Wisconsin

8. Is your college/university public or private?

- ☐ Public
- ☐ Private

9. Do you have a good understanding of Autism Spectrum Disorder? Rate your understanding on a scale from 1-9

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

10. Do you have a good understanding of Teacher Efficacy? Rate your understanding on a scale from 1-9.

- ☐ 1: None at all
- ☐ 2:
- ☐ 3: Very Little
- ☐ 4:
- ☐ 5: Some Degree
- ☐ 6:
- ☐ 7: Quite a Bit
- ☐ 8:
- ☐ 9: A Great Deal

11. Please indicate any comments/concerns you had regarding the survey.

V: Gift certificate

Thank you for your cooperation in completing this survey.

If you would like to be entered to win one of sixteen Target gift certificates for \$25.00 please enter your email address below so you can be notified.

This is optional! If you do not feel comfortable entering your email address you do not need to complete this item and thus will not be entered in the drawing. Remember, should the data be published, no individual information will be disclosed.

Email address: _____

APPENDIX D

APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH

Andrews University
Application for Review of Human Subjects Research
The Research Protocol

Informed Consent

Principal Investigator: Amy Cramer

Advisor: Dr. Elvin Gabriel

Title of Research: Attitude and Efficacy Beliefs of Preservice teachers' toward Inclusion of Students with Autism Spectrum Disorders

1. Purpose, Methods, and Time Frame of Research:

The general purpose of this study is to identify preservice teacher attitudes towards inclusion of students with Autism Spectrum Disorders (ASD). Previous research has broadly focused on students with disabilities without differentiation of the 13 disability categories as listed in the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA). This study will also explore factors relating to inclusion and include teacher efficacy, the type of student disability, teacher preparation programs and demographic factors. By understanding the factors that influence preservice teacher attitudes, teacher preparation programs may be able to use this information to better prepare teachers for students with exceptionalities, particularly ASD within the classrooms.

This study will use a quantitative design utilizing data collected through online surveys. The link to the survey will remain active from February 2010 until May, 2010.

2. Description of subjects:

Participants will be preservice teachers from colleges and universities across the Midwestern region of the United States (Michigan, Indiana, Illinois, Ohio, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Minnesota, Iowa, Missouri, and Wisconsin). Colleges and universities were chosen from Peterson's Colleges in the Midwest, 2009. All schools with a school of Education or Education Department were chosen as the population of interest.

Schools were chosen from this population to meet demographic representation.

The participants will include preservice teachers. Preservice teachers are defined as students of at least 18 years of age or older who are enrolled in a teacher education program and pursuing an education degree. All preservice teachers who are 18 years of age or older will be asked to participate in this study regardless of gender, ethnicity, special education concentration, or progress within their area of study.

It is hoped that a minimum of 300 students will participate in this study. The sample size is subject to the number of students who volunteer to participate.

3. Description of how subjects will be recruited and how they will be involved.

Deans and Chairs of education departments were sent an email explaining the nature of the study and then asked to forward a letter of explanation and link to the online survey to the students in their teacher education program. When an email address to the Dean or Chair was not available, professors within the education department were sent an email with a link to the online survey.

Once the survey is forwarded from either the dean or the chair of the education department to the student, the student will open the email attachment to a letter explaining the nature of the study and includes an internet link to the study. The preservice teachers are asked to cut and paste the link into their web browser and this link will open to the online survey. The survey should take no more than 15 minutes to complete.

The first page of the survey is a letter of consent. Participants will be directed to read the consent letter and print a copy for their records. The participants are required to read the consent form and make a determination to participate.

Participants of this study must be at least 18 years of age or older to participate within the study. The first page of the online consent form requires the participants to verify that they are at least 18 years of age or older. Once they verify this age requirement, the survey will open for them to complete online.

There is no compensation for participating within this research study. Participants will have an opportunity to win one of sixteen \$25.00 gift certificates to Target.

4. Benefits of the research to the subjects and benefits to humanity and/or scientific knowledge:

Participation in this study is vital for furthering teacher training research. This research will provide avenues for effective teacher training and for ensuring quality services for students with Autism Spectrum Disorders. It is hoped that participants will be given the opportunity to reflect about their role in the life of a student with an Autism Spectrum Disorder.

5. Explanation of how the welfare and rights of subjects whose competency to give informed consent is compromised is to be protected if involved in the research:

This survey is anonymous. The survey is web-based and is completed through Survey Monkey; therefore no IP addresses can be gathered by the researcher. No one will be able to identify the participants' answers, and no one will know whether certain participants participated in the study. The records of this study will be kept private. In any report of this study that might be published, the researcher will not include any information that will make it possible to identify the participants. No identifiers such as name will be used for this research.

6. A description of the risks and discomforts, if any, to the subjects:

There are no known risks to participants. Participants are unlikely to experience anxiety or stress due to the nature of this study.

Participants will not encounter the possibility of stress or psychological, social, physical, or legal risks that are greater than those ordinarily encountered in daily life. Medical clearance is not necessary for participants to participate. The subject will not be deceived or misled in any way. The participants will not be presented with materials that might be considered offensive, threatening, or degrading. All data will be kept confidential to minimize risks.

The participants will be asked to provide demographic information as part of the survey and this may be considered too personal for some. Each participant will be instructed:

“In the event you experience stress or anxiety during your participation in the study, you may terminate your participation at any time. You may refuse to answer any questions you consider invasive or stressful.”

7. A description of the means to be taken to minimize each such deleterious effect or violation, including the means by which the subjects' personal privacy is to be protected and the confidentiality of information received is to be maintained:

Participation in this study is strictly voluntary. The decision whether or not to participate will not affect the students' current or future relations with the institution in which they are a student. Participants are also informed that if they initially decide to participate and then change their mind; they are free to withdraw at any time without affecting those relationships. Comments and answers will remain confidential.

8. A copy of the consent form that is to be used with the subjects.

See attached

Documentation of Informed Consent

You are being asked to participate in a research study about attitudes toward inclusion of students with Autism Spectrum Disorders and teacher efficacy. This research study will be completed through an online survey.

This research study is being conducted by Amy Cramer, and Educational Psychology student at Andrews University in Berrien Springs Michigan. The research study aims to identify preservice teacher attitudes towards inclusion of students with Autism Spectrum Disorders and related factors. Previous research has broadly focused on students with disabilities without differentiation of the 13 disability categories as listed in the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA). By understanding the factors that influence preservice teacher attitudes, teacher preparation programs may be able to use this information to better prepare teachers for students with exceptionalities, particularly ASD within the classrooms.

You are being asked to participate because you are in a teacher training program pursuing an education degree. The online survey will take no longer than 15 minutes to complete. If you decide to participate within the study, please complete the online questionnaire by April 20, 2010.

The information collected may not benefit you directly, but the information learned is vital for furthering teacher training research. This research will provide avenues for effective teacher training and for ensuring quality of services for students with Autism Spectrum Disorders.

There are no known risks if you decide to participate in this research study. In the event that you experience stress or anxiety during your participation in the study, you may terminate your participation at any time.

There is no compensation for participating within this research study. But, by completing this survey, you will be eligible to win one of sixteen gift certificates to Target worth \$25.00.

This survey is anonymous. The survey is web-based and is completed through SurveyMonkey; therefore no IP addresses can be gathered by the researcher. Should the data be published, no individual information will be disclosed.

If you have any questions regarding this study, please contact Amy Cramer via email at Amy.Cramer@yahoo.com or by phone, 219-464-6294. The researcher's faculty advisor is Dr. Elvin Gabriel, Associate Professor of Educational Counseling Psychology, and he may be reached via email at Gabriel@andrews.edu or by phone, 269-471-6223.

Your participation in this study is strictly voluntary. Your decision whether or not to participate will not affect your current or future relations with the institution in which you

are a student. If you initially decide to participate, you are still free to withdraw at any time later without affecting those relationships.

****I certify that I have read and understand this consent form and agree to participate as a subject in the research described. I agree that known risks to me have been explained to my satisfaction and I understand that no compensation is available from Andrews University and its employees for any injury resulting from my participation in this research. I certify that I am 18 years of age or older. My participation in this research is given voluntarily. I understand that I may discontinue participation at any time without penalty or loss of any benefits to which I may otherwise be entitled. By completing the online questionnaire, I am voluntarily agreeing to participate. I acknowledge that I am able to print this copy of the consent form for my records.***

- ☐ I agree to participate
- ☐ I will not participate

APPENDIX E

SCALE USE PERMISSIONS

Permission to use ORI Scale

From: BARBARA LARRIVEE <blarrive@csusb.edu> Monday - September 29, 2008 3:43 PM
To: Amy Cramer <Amy.Cramer@valpo.edu>
Subject: Re: ORI copy and scoring instructions
Attachments: Opinions Relative Revised.pdf (477196 bytes) [Open] [Save As]
ORI REFS.doc (6695 bytes) [Open] [Save As]
ORI REVised Permission to Use.doc (25088 bytes) [Open] [Save As]
Mime.822 (702481 bytes)

Amy,

You have my permission to use the scale. You are free to make changes as long as you state that the scale has been adapted.

If you do make changes, there is no way of knowing without further research the effect on the reliability and validity. However making these changes may better suit your research agenda.

I am attaching a PDF file that includes a permission form, so you should mail 2 copies to me and I will return one for your files.

Dr. Barbara Larrivee, Professor
College of Education
California State University
5500 University Parkway, FO-251
San Bernardino, CA 92407
Phone: (909)537-5670
Email: blarrive@csusb.edu

----- Original Message -----

From: Amy Cramer <Amy.Cramer@valpo.edu>
Date: Sunday, September 28, 2008 5:40 pm
Subject: ORI copy and scoring instructions
To: blarrive@csusb.edu

Dr. Larrivee,

My name is Amy Cramer and I am a doctoral candidate at Andrews University in Berrien Springs Michigan. I am working on my dissertation, Preservice teacher Opinions regarding Inclusion of Students with Autism Spectrum Disorders.

I have been researching surveys and scales to use in my dissertation. I would like to ask permission to use The Opinions Relative to the Inclusion of Students with Disabilities Scale developed by you and Dr. Antonak.

I also wondered if, since I am looking at a more specific disability category, I could reword some of the items from the scale to replace the term 'disability' with the term 'autism spectrum disorder.' I do not want to reword items if you feel that it would have an impact upon the reliability and validity of the scale.

Your help with this matter is greatly appreciated!

Thank You,

Amy Cramer

Permission to use TSES scale

From: "Megan Tschannen-Moran" Friday - June 5, 2009 10:16 AM
<mxtsch@wm.edu>
To: "Amy Cramer" <Amy.Cramer@valpo.edu>
Subject: RE: Teacher Sense of Efficacy Scale Long Form
Attachments: Mime.822 (4867 bytes) [Save As]

Amy,

You have my permission to use the Teachers Sense of Efficacy Scale (TSES) that I developed with Dr. Anita Woolfolk Hoy in your research. Please use the following citation when referencing the scale:

Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.

Although the name has been changed since that article was published, the contents of the scale remain the same.

You may download a copy of the instrument and directions for administration from my website at <http://mxtsch.people.wm.edu>.

Your study sounds interesting and like it has the potential to add to our knowledge base of the role of self-efficacy among special educators. You have my permission to change the wording to adapt it to the specific context of your study, but you will want to test the reliability and validity in that context and report those with your findings. The reliability is easy to do. Validity is more challenging, although if you have a large enough sample to conduct a factor analysis, it could be achieved that way. You may want to discuss these issues with your committee chair and decide on the relative merits of adapting the measure or using it as is.

I would like to receive a brief summary of your results when you are finished.

All the best,

Megan Tschannen-Moran

The College of William and Mary
School of Education
PO Box 8795
Williamsburg, VA 23187-8795
Telephone: 757-221-2187
<http://mxtsch.people.wm.edu>

-----Original Message-----

From: Amy Cramer [mailto:Amy.Cramer@valpo.edu]

Sent: Wednesday, May 20, 2009 6:33 PM

To: mxtsch@wm.edu

Subject: Teacher Sense of Efficacy Scale Long Form

Dr. Tschannen-Moran,

My name is Amy Cramer and I am a doctoral candidate at Andrews University in Berrien Springs Michigan. I am working on my dissertation, Preservice Teacher Efficacy as a Correlate of Attitudes towards Inclusion of Students with Autism Spectrum Disorders.

I have been researching surveys and scales to use in my dissertation. I would like to ask permission to use the Teacher Sense of Efficacy Scale, Long Form developed by you and Dr. Woolfolk-Hoy.

I also wondered if, since I am looking at a more specific disability category, I could reword some of the items from the scale if necessary. I do not want to reword items if you feel that it would have an impact upon the reliability and validity of the scale.

Your help with this matter is greatly appreciated!

Sincerely,

Amy Cramer

Statement of Permission to Use Opinions Relative to the Integration of Students with Disabilities (ORI)


I, Barbara Larrivee, hereby grant permission to use the *Opinions Relative to the Integration of Students with Disabilities (ORI)*, revised form to:

Name: Amy Cramer
Institution: Andrew's University
Address: 2421 W. Pepperidge Ct.
La Porte, IN 46383
Phone no.: 574-849-5552

This permission is granted for research purposes only. If changes are made to the ORI, the citation must say "adapted from."

The above named also agrees to provide a written summary of findings including a by-item analysis. This report should be sent within 30 days of completion of the research to:

Dr. Barbara Larrivee, Professor
Department of Learning, Literacy and Culture
California State University
5500 University Parkway
San Bernardino, CA 92407-2397


Barbara Larrivee

4-5-10
Date

APPENDIX F

VARIABLE TABLE

VARIABLE TABLE

Variable (Concept)	Conceptual Definition	Instrumental Definition	Operational Definition
Teacher Efficacy (Quantitative) – TSES Factor I	A teacher's belief that he/she can reach every student regardless of disability	Variable determined by score on the TSES. The subject will circle a number that indicates his/her response to each of the questions according to the following scale: 1 = None at all 2 = 3 = Very Little 4 = 5 = Some Degree 6 = 7 = Quite a Bit 8 = 9 = A Great Deal	In order to measure this variable, the mean scores were computed for each of the 24 items on the scale. Scores range from 1 to 9 with a higher score representing higher efficacy. For purposes of this study, the following rating was determined.
Attitudes Toward Inclusion – ORI-ASD Factor I (Quantitative)	A teacher's thoughts and/or feelings towards inclusion with student who have ASD within the regular education.	Variable determined by the score on the ORI-ASD Factor I Subscale. Factor I includes item numbers: 3, 5, 7, 11, 12, 13, 14, 17, 18, 20, 21, 24, & 25.	In order to measure the variable, the mean scores were taken for each item and averaged together. Scores range from 1 to 6.
Preparedness of Preservice teachers for Inclusion– ORI-ASD Factor II (Quantitative)	A teacher's thoughts and/or feelings towards the appropriateness of the inclusive placement of student who have ASD within the regular education classroom and includes classroom management.	Variable determined by the score on the ORI-ASD Factor II Subscale. Factor II includes item numbers: 2, 4, 8, 10, 15, 16, 19, 22, & 23.	In order to measure the variable, the mean scores were taken for each item and averaged together. Scores range from 1 to 6.

APPENDIX G

IRB APPROVAL FORMS



March 11, 2010

Amy Cramer
2421 W. Pepperidge Ct
La Porte
IN 46350

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

IRB Protocol #:10-013 **Application Type:** Original **Dept:** Educational Psychology
Review Category: Exempt **Action Taken:** Approved **Advisor:** Elvin Gabriel
Title: Attitudes and Efficacy Beliefs of Preservice teachers Toward Inclusion of Students with Autism Spectrum Disorder.

This letter is to advise you that the Institutional Review Board (IRB) has reviewed and approved your proposal for research. You have been given clearance to proceed with your research plans.

All changes made to the study design and/or consent form, after initiation of the project, require prior approval from the IRB before such changes can be implemented. Feel free to contact our office if you have any questions. In all communications with our office, please be sure to identify your research by its IRB Protocol number.

The duration of the present approval is for one year. If your research is going to take more than one year, you must apply for an extension of your approval in order to be authorized to continue with this project.

Some proposal and research design designs may be of such a nature that participation in the project may involve certain risks to human participants. If your project is one of this nature and in the implementation of your project an incidence occurs which results in a research-related adverse reaction and/or physical injury, such an occurrence must be reported immediately in writing to the Institutional Review Board. Any project-related physical injury must also be reported immediately to University Medical Specialties, by calling (269) 473-2222.

We wish you success as you implement the research project as outlined in the approved protocol.

Sincerely,

X

Administrative Coordinator
Institutional Review Board

Institutional Review Board
(269) 471-6360 Fax: (269) 471-6246 E-mail: irb@andrews.edu
Andrews University, Berrien Springs, MI 49104-0355

VALPARAISO UNIVERSITY
Institutional Review Board

To: Amy Cramer
Education

From: Theresa Kessler
Chair, IRB

RE: Attitudes and Efficacy Beliefs of Preservice teachers toward Inclusion of Students
with Autism Spectrum Disorders

Date: February 22, 2010

The IRB has approved the above study as exempt research on February 22, 2010. The project was reviewed in accordance with all research statutes and regulations.

The researcher has continuing approval of this project. However, if additional protocol changes are planned, approval must be sought from the IRB prior to implementing those changes. When the project is completed, notify the Office of IRB.

APPENDIX H

ADDITIONAL TABLES

Table 20

ORI-ASD 5-Factor Model, Pattern Matrix

No.	Item	<i>Factors</i>				
		I	II	III	IV	V
#19	Regular-classroom teachers have sufficient training to teach students with ASD.		.700			
#10	Regular-classroom teachers have the ability necessary to work with students with ASD		.597			
*#2	Integration of students with ASD will necessitate extensive retraining of regular-classroom teachers.		.518			
#13	The student with ASD will probably develop academic skills more rapidly in a regular classroom than in a special classroom.			.789		
#5	Students with ASD can best be served in regular classrooms.			.673		
#7	The challenge of being in a regular classroom will promote the academic growth of the student with ASD.			.618		
#3	Integration offers mixed group interaction That will foster understanding and acceptance of differences among students.				.628	
#17	The integration of students with ASD can be beneficial for students without disabilities.				.620	
*#11	The presence of students with ASD will not promote acceptance of differences on the part of students without ASD.				.552	
*#15	It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD.					.686
*#4	It is likely that the student with ASD will exhibit behavior problems in a regular classroom.					.554
*#18	Students with ASD are likely to create confusion in the regular education classroom.					.517

Table 20—*Continued.*

No.	Item	<i>Factors</i>				
		I	II	III	IV	V
#22	The classroom behavior of a student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD.					.409

*Reverse Scored.

Table 21

ORI-ASD 4-Factor Model, Pattern Matrix

No.	Item	<i>Factors</i>			
		I	II	III	IV
#17	The inclusion of students with ASD can be beneficial for students without disabilities.	.647			
#3	Inclusion offers mixed group interaction That will foster understanding and acceptance of differences among students.	.623			
*#11	The presence of students with ASD will not promote acceptance of differences on the part of students without ASD.	.596			
*#12	The behavior of students with ASD sill set a bad example for students without ASD.	.436			
#21	Students with ASD should be given every opportunity to function in the regular classroom where possible.	.404			
#19	Regular-classroom teachers have sufficient training to teach students with ASD.		.680		
#10	Regular-classroom teachers have the ability necessary to work with students with ASD		.577		
*#2	Inclusion of students with ASD will necessitate extensive retraining of regular-classroom teachers.		.416		
#13	The student with ASD will probably develop academic skills more rapidly in a regular classroom than in a special classroom.			.781	
#5	Students with ASD can best be served in regular classrooms.			.658	
#7	The challenge of being in a regular classroom will promote the academic growth of the student with ASD.			.603	
*#15	It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD.				.699
*#18	Students with ASD are likely to create confusion in the regular education classroom.				.580

Table 21—*Continued.*

No.	Item	<i>Factors</i>			
		I	II	III	IV
#4	It is likely that the student with ASD will exhibit behavior problems in a regular classroom.				.538
*#8	Inclusion of students with ASD will require significant changes in regular classroom procedures.				.497
#16	Students with ASD will not monopolize the regular classroom teacher's time.				.460
#22	The classroom behavior of the student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD.				.427

*Reverse Scored

Table 22

ORI-ASD 3-Factor Model, Pattern Matrix

No.	Item	<i>Factors</i>		
		I	II	III
#17	The inclusion of students with ASD can be beneficial for students without disabilities.	.714		
#3	Inclusion offers mixed group interaction That will foster understanding and acceptance of differences among students.	.689		
#7	The challenge of being in a regular classroom will promote the academic growth of the student with ASD.	.630		
*#20	Inclusion will likely have a negative effect on the emotional development of the student with ASD.	.630		
#21	Students with ASD should be given every opportunity to function in the regular classroom where possible.	.589		
#5	Students with ASD can best be served in regular classrooms.	.534		
*#11	The presence of students with ASD will not promote acceptance of differences on the part of students without ASD.	.511		
#13	The student with ASD will probably develop academic skills more rapidly in a regular classroom than in a special classroom.	.503		
*#14	Inclusion of the student with ASD will not promote his or her social independence.	.486		
*#12	The behavior of students with ASD sill set a bad example for students without ASD.	.436		
*#24	Isolation in a special classroom has a Beneficial effect on the social and emotional development of the student with ASD.	.436		
*#15	It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD.		.635	

Table 22—*Continued.*

No.	Item	<i>Factors</i>		
		I	II	III
*#8	Inclusion of students with ASD will require significant changes in regular classroom procedures.		.615	
*#2	Inclusion of students with ASD will necessitate extensive retraining of regular-classroom teachers.		.609	
*#4	It is likely that the student with ASD will exhibit behavior problems in a regular classroom.		.532	
#16	Students with ASD will not monopolize the regular classroom teacher's time.		.515	
*#18	Students with ASD are likely to create confusion in the regular education classroom.		.501	
#22	The classroom behavior of the student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD.		.484	
#6	The extra attention students with ASD require will be to the detriment of the other students.		.457	
#19	Regular-classroom teachers have sufficient training to teach students with ASD.		.408	
*Reverse Scored				

Table 23

ORI-ASD 2-Factor Model, Pattern Matrix

No.	Item	<i>Factors</i>	
		I	II
#17	The Inclusion of students with ASD can be beneficial for students without disabilities.	.743	
#3	Inclusion offers mixed group interaction That will foster understanding and acceptance of differences among students.	.707	
*#20	Inclusion will likely have a negative effect on the emotional development of the student with ASD.	.650	
#21	Students with ASD should be given every opportunity to function in the regular classroom where possible.	.604	
#7	The challenge of being in a regular classroom will promote the academic growth of the student with ASD.	.587	
*#11	The presence of students with ASD will not promote acceptance of differences on the part of students without ASD.	.535	
*#14	Inclusion of the student with ASD will not promote his or her social independence.	.503	
#5	Students with ASD can best be served in regular classrooms.	.494	
*#12	The behavior of students with ASD sill set a bad example for students without ASD.	.472	
#13	The student with ASD will probably develop academic skills more rapidly in a regular classroom than in a special classroom.	.452	
*#24	Isolation in a special classroom has a Beneficial effect on the social and emotional development of the student with ASD.	.445	
*#2	Inclusion of students with ASD will necessitate extensive retraining of regular-classroom teachers.		.669

Table 23—*Continued.*

No.	Item	<i>Factors</i>	
		I	II
*#8	Inclusion of students with ASD will require significant changes in regular classroom procedures.		.627
#16	Students with ASD will not monopolize the regular classroom teacher's time.		.514
#19	Regular-classroom teachers have sufficient training to teach students with ASD.		.513
*#15	It is more difficult to maintain order in a regular classroom that contains a student with ASD than in one that does not contain a student with ASD.		.511
#22	The classroom behavior of the student with ASD generally does not require more patience from the teacher than does the classroom behavior of the student without ASD.		.502
#4	It is likely that the student with ASD will exhibit behavior problems in a regular classroom.		.487
#10	Regular-classroom teachers have the ability necessary to work with students with ASD.		.452
*Reverse Scored			

Table 24

TSES 4-Factor Model, Pattern Matrix

No.	Item	Factors			
		I	II	III	IV
#23	How well can you implement alternative strategies in your classroom?	.754			
#18	How much can you use a variety of assessment Strategies?	.754			
#17	How much can you do to adjust your lessons to the proper level for individual students?	.661			
#24	How well can you provide appropriate challenges for very capable students?	.550			
#20	To what extent can you provide an alternative explanation of example when students are confused?	.447			
#11	To what extent can you craft good questions for your students?	.455			
#15	How much can you do to calm a student who is disruptive or noisy?		.742		
#19	How well can you keep a few problem students from ruining an entire lesson?		.636		
#13	How much can you do to get children to follow classroom rules?		.635		
#21	How well can you respond to defiant students?		.588		
#16	How well can you establish a classroom management system with each group of students?		.515		
#3	How much can you do to control disruptive behavior in the classroom?		.436		
#5	To what extent can you make your expectations clear about student behavior?			.470	
#4	How much can you do to motivate students who show low interested in school work?				.743
#1	How much can you do to get through to the most difficult students?				.624
#6	How much can you do to get students to believe they can do well in school?				.622
#2	How much can you do to help your students think critically?				.591
#9	How much can you do to help your students value learning?				.582

Table 25

TSES 3-Factor Model, Pattern Matrix

No.	Item	Factors		
		I	II	III
#5	To what extent can you make your expectations clear about student behavior?	.719		
#2	How much can you do to help your students think critically?	.704		
#3	How much can you do to control disruptive behavior in the classroom?	.691		
#6	How much can you do to get students to believe they can do well in school?	.526		
#1	How much can you do to get through to the most difficult students?	.512		
#10	How much can you gauge student comprehension of what you have taught?	.462		
#4	How much can you do to motivate students who show low interest in school work?	.454		
#8	How well can you establish routines to keep activities running smoothly?	.446		
#9	How much can you do to help your students value learning?	.446		
#13	How much can you do to get children to follow classroom rules?	.436		
#16	How well can you establish a classroom management system with each group of students?	.411		
#23	How well can you implement alternative strategies in your classroom?		.829	
#18	How much can you use a variety of assessment Strategies?		.764	
#17	How much can you do to adjust your lessons to the proper level for individual students?		.730	
#24	How well can you provide appropriate challenges for very capable students?		.564	
#20	To what extent can you provide an alternative explanation of example when students are confused?		.526	
#22	How much can you assist families in helping their children do well in school?		.472	
#11	To what extent can you craft good questions for your students?		.401	
#15	How much can you do to calm a student who is disruptive or noisy?			.598

Table 25—*Continued.*

No.	Item	Factors		
		I	II	III
#21	How well can you respond to defiant students?			.514
#19	How well can you keep a few problem students from ruining an entire lesson?			.479

Table 26

TSES 2-Factor Model, Pattern Matrix

No.	Item	Factors	
		I	II
#16	How well can you establish a classroom management system with each group of students?	.797	
#3	How much can you do to control disruptive behavior in the classroom?	.784	
#13	How much can you do to get children to follow classroom rules?	.772	
#15	How much can you do to calm a student who is disruptive or noisy?	.768	
#14	How much can you do to improve the understanding of a student who is failing?	.765	
#19	How well can you keep a few problem students from ruining an entire lesson?	.734	
#21	How well can you respond to defiant students?	.729	
#4	How much can you do to motivate students who show low interest in school work?	.710	
#9	How much can you do to help your students value learning?	.684	
#1	How much can you do to get through to the most difficult students?	.677	
#2	How much can you do to help your students think critically?	.674	
#6	How much can you do to get students to believe they can do well in school?	.640	
#10	How much can you gauge student comprehension of what you have taught?	.627	
#8	How well can you establish routines to keep activities running smoothly?	.627	
#23	How well can you implement alternative strategies in your classroom?	.622	
#11	To what extent can you craft good questions for your students?	.621	
#5	To what extent can you make your expectations clear about student behavior?	.601	
#24	How well can you provide appropriate challenges for very capable students?	.593	
#22	How much can you assist families in helping their children do well in school?	.561	
#7	How well can you respond to difficult questions from your students?	.555	

Table 26—*Continued.*

No.	Item	Factors	
		I	II
#20	To what extent can you provide an alternative explanation of example when students are confused?	.550	
#12	How much can you do to foster student creativity?	.549	
#18	How much can you use a variety of assessment Strategies?	.519	
#17	How much can you do to adjust your lessons to the proper level for individual students?	.512	

Table 27

Frequency Table ORI-ASD Item 2

	Frequency	Percent
I disagree very much	19	1.8
I disagree pretty much	97	9.4
I disagree a little	143	13.9
I agree a little	338	32.9
I agree pretty much	280	27.2
I agree very much	147	14.3
Total	1024	99.6
Missing	4	.4

Table 28

Frequency Table ORI-ASD Item 10

	Frequency	Percent
I disagree very much	55	5.4
I disagree pretty much	137	13.3
I disagree a little	263	25.6
I agree a little	257	25.0
I agree pretty much	228	22.2
I agree very much	80	7.8
Total	1020	99.2
Missing	8	.8

Table 29

Frequency Table ORI-ASD Item 19

	Frequency	Percent
I disagree very much	147	14.3
I disagree pretty much	284	27.6
I disagree a little	315	30.6
I agree a little	191	18.6
I agree pretty much	81	7.9
I agree very much	8	.8
Total	1026	99.8
Missing	2	.2

Table 30

Frequency Table ORI-ASD Item 4

	Frequency	Percent
I disagree very much	18	1.8
I disagree pretty much	83	8.1
I disagree a little	178	17.3
I agree a little	410	39.9
I agree pretty much	252	24.5
I agree very much	83	8.1
Total	1024	99.6
Missing	4	.4

Table 31

Frequency Table ORI-ASD Item 12

	Frequency	Percent
I disagree very much	402	39.1
I disagree pretty much	341	33.2
I disagree a little	177	17.2
I agree a little	82	8.0
I agree pretty much	17	1.7
I agree very much	6	.6
Total	1025	99.7
Missing	3	.3

REFERENCE LIST

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- Ahsan, T. M., Sharma, U., & Deppeler, J. M. (2012). Exploring pre-service teachers' perceived teaching-efficacy, attitudes and concerns about inclusive education in Bangladesh. *International Journal of Whole Schooling*, 8(2), 1-20.
- Alghazo, E. M., Dodeen, H., & Algaryouti, I. A. (2003). Attitudes of pre-service teachers towards persons with disabilities: Predictions for the success of inclusion. *College Student Journal*, 37(4), 515-522.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.
- Antonak, R., & Larrivee, B. (1995). Psychometric analysis and revision of the Opinions Relative to Mainstreaming Scale. *Exceptional Children*, 62(2), 139-149.
- Atiles, J.T., Jones, J.L., & Kim, H. (2012). Field experience + inclusive ECE classrooms = increased preservice teacher efficacy in working with students with developmental delays or disabilities. *Educational Research Quarterly*, 36(2), 62-85.
- Avramidis, E., Bayliss, P., & Burden, R. (2000). A survey into mainstream teachers' attitudes towards the inclusion of children with special educational needs in the ordinary school in one local education authority. *Educational Psychology*, 20(2), 191-211.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Bandura, A. (1999). Social cognitive theory: An agentic perspective. *Asian Journal of Social Psychology*, 2, 21-41.
- Barned, N. E., Flanagan Knapp, N. & Neuharth-Pritchett, S. (2011). Knowledge and attitudes of early childhood preservice teachers regarding the inclusion of children with autism spectrum disorder. *Journal of Early Childhood Teacher Education*, 32(4), 302-321.

- Bateman, D., & Bateman, F. (2002). *What does a principal need to know about inclusion?* (ERIC Digest E635). Retrieved from <http://www.ericdigests.org/2003-5/inclusion.htm> (ED473828)
- Bender, W., Vail, C., & Scott, K. (1995). Teachers' attitudes toward increased mainstreaming: Implementing effective instruction for students with learning disabilities. *Journal of Learning Disabilities*, 28(2), 87-94.
- Betancourt-Smith, M. (1994). High school teachers and mainstreaming: Implications for training. *Education*, 114(3), 448-450.
- Block, M.E., Hutzler, Y.S., Barak, S., & Klavina, A. (2013). Creation and validation of the self-efficacy instrument for physical education teacher education majors toward inclusion. *Adapted Physical Activity Quarterly*, 29, 184-205.
- Braithwaite, D., Emery, J., de Lusignan, S., & Sutton, S. (2003). Using the internet to conduct surveys of health professionals: A valid alternative. *Family Practice*, 20(5), 545-551.
- Brown v. Board of Education, 347 U.S. 483 (1954).
- Brownell, M. T., & Pajares, F. (1999). Teacher efficacy and perceived success in mainstreaming students with learning and behavior problems. *Teacher Education and Special Education*, 22(3), 154-164.
- Buell, M. J., Hallam, R., & Gamel-McCormick, M. (1999). A survey of general and special education teachers' perceptions and inservice needs concerning inclusion. *International Journal of Disability, Development, and Education*, 46(2), 143-156.
- Burke, K., & Sutherland, C. (2004). Attitudes toward inclusion: Knowledge vs. experience. *Education*, 125(2), 163-172.
- Busby, R., Ingram, R., Bowron, R., Oliver, J., & Lyons, B. (2012). Teaching elementary children with autism: Addressing teacher challenges and preparation needs. *Rural Educator*, 33(2), 27-35.
- Carroll, A., Forlin, C., & Jobling, A. (2003). The impact of teacher training in special education on the attitudes of Australian preservice general educators towards people with disabilities. *Teacher Education Quarterly*, 30(3), 65-79.
- Cattell, R.B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, 1(2), 245-276.
- Center, Y., & Ward, J. (1987). Teachers' attitudes towards the inclusion of disabled children into regular schools. *The Exceptional Child*, 34(1), 41-56.

- Centers for Disease Control. (2009). Prevalence of autism spectrum disorders—Autism and Developmental Disabilities Monitoring Network, United States, 2006. In *Surveillance Summaries, December 18, 2009. MMWR, 58*(SS10), 1-20. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5810a1.htm>
- Centers for Disease Control. (2012). Prevalence of autism spectrum disorders—Autism and Developmental Disabilities Monitoring Network, United States, 2008. In *Surveillance Summaries, March 30, 2012. MMWR, 61*(SS03), 1-19. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm>
- Centers for Disease Control. (2014). Prevalence of autism spectrum disorder among children aged 8 years—Autism and Developmental Disabilities Monitoring Network, United States, 2010. In *Surveillance Summaries, March 28, 2014. MMWR, 63*(SS02), 1-21. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6302a1.htm?s_cid=ss6302a1_w#Tab5
- Clark, S. K. (2009). *A comparative analysis of elementary education preservice and novice teachers' perceptions of preparedness and teacher efficacy* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3369023)
- Comer, R. J. (1995). *Abnormal psychology*. New York: W.H. Freeman.
- Comrey, A.L., & Lee, H. B. (1992). *A first course in factor analysis*. New York: Lawrence Erlbaum.
- Costello, A., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*(7), 1-10.
- Council for Exceptional Children. (2009). *What every special educator must know: ethics, standards, and guidelines* (6th ed.). Arlington, VA: Author.
- Creative Research Systems. (2010). *The survey system: Survey design—how to begin your survey design project*. Retrieved from <http://www.surveysystem.com/sdesign.htm>
- Daily, M. (2005). Inclusion of students with autism spectrum disorders. *New Horizons for Learning*. Retrieved from <http://education.jhu.edu/PD/newhorizons/ExceptionalLearners/AutismArticlesInclusionofStudentswithAutismSpectrumDisorders/index.html>
- Dupoux, E., Hammond, H., Ingalls, L., & Wolman, C. (2006). Teachers' attitudes toward students with disabilities in Haïti. *Journal of Special Education, 21*(3), 1-14.

- Dupoux, E., Wolman, C., & Estrada, E. (2005). Teachers' attitudes toward integration of students with disabilities in Haïti and the United States. *International Journal of Disability, Development and Education*, 52(1), 43-58.
- Dyer, R. (2003). *A survey of the influence of general outcome measurement on teachers' beliefs and attitudes concerning inclusion* (Master's thesis). Available from ProQuest Dissertations and Theses database. (UMI No. 1415839)
- Education for All Handicapped Children Act of 1975 (Pub. L. No. 94-142).
- El-Ashry, F. R. (2009). *General education pre-service teachers' attitudes toward inclusion in Egypt* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3367418)
- Elhoweris, H., & Alsheikh, N. (2006). Teachers' attitudes towards inclusion. *International Journal of Special Education*, 21(1), 115-118.
- Field, A. P. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage.
- Fives, H., & Buehl, M. M. (2010). Examining the factor structure of the teachers' sense of efficacy scale. *The Journal of Experimental Education*, 78, 118-134.
- Flood, J. N. (2007). *Psychometric characteristics of the teacher efficacy scale: Factor structure, reliability, and concurrent validity* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3262011)
- Forlin, C. (1995). Educators' beliefs about inclusive practices in Western Australia. *British Journal of Special Education*, 22(4), 179-185.
- Forlin, C., Cedillo, I. G., Romero-Contreras, S., Fletcher, T., & Hernandez, J. R. (2010). Inclusion in Mexico: Ensuring supportive attitudes by newly graduated teachers. *International Journal of Inclusive Education*, 14(7), 723-739.
- Forlin, C., & Chambers, D. (2011). Teacher preparation for inservice education: Increasing knowledge but raising concerns. *Asia-Pacific Journal of Teacher Education*, 39(1), 17-32.
- Forlin, C., Hattie, J., & Douglas, G. (1996). Inclusion: Is it stressful for teachers? *Journal of Intellectual & Developmental Disability*, 21(3), 199-217.
- Forlin, C., Loreman, T., Sharma, U. & Earle, C. (2009). Demographic differences in changing pre-service teachers' attitudes, sentiments and concerns about inclusive education. *International Journal of Inclusive Education*, 13(2), 195-209.
- Forlin, C., Tait, K., Carroll, A., & Jobling, A. (1999). Teacher education for diversity. *Queensland Journal of Educational Research*, 15(2), 207-226.

- Friend, M. (2005). *Special education: Contemporary perspectives for school professionals*. Boston, MA: Pearson Education.
- Fuchs, D., & Fuchs, L. S. (1998). Competing visions for educating students with disabilities: Inclusion versus full inclusion. *Childhood Education*, 74(5), 309-316.
- Gal, E., Schreur, N., & Engel-Yeger, B. (2010). Inclusion of children with disabilities: Teachers' attitudes and requirements for environmental accommodations. *International Journal of Special Education*, 25(2), 89-99.
- Gao, W., & Mager, G. (2011). Enhancing preservice teachers' sense of efficacy and attitudes toward school diversity through preparation: A case of one U.S. inclusive teacher education program. *International Journal of Special Education*, 26(2), 92-107.
- Gargiulo, R. (2006). *Special education in contemporary society*. Belmont, CA: Thompson Learning.
- Garriott, P. P., Miller, M., & Snyder, L. (2003). Preservice teachers' beliefs about inclusive education: What should teacher educators know? *Action in Teacher Education*, 25(1), 48-54.
- Gent, P. J. (1996). *Using case studies in a course on disabilities to improve the attitudes toward inclusion and the critical thinking skills of preservice teachers*. (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9716983)
- George, D., & Mallery, P. (2006). *SPSS for windows step by step: A simple guide and reference 13.0 update* (6th ed.). Boston: Allyn and Bacon.
- Gibson, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology*, 76(4), 569-582.
- Hammond, H., & Ingalls, L. (2003). Teachers' attitudes toward inclusion: Survey results from elementary school teachers in three southwestern rural school districts. *Rural Special Education Quarterly*, 22(2), 24-30.
- Hartmann, E. (2012). A scale to measure teachers' self-efficacy in deaf-blindness education. *Journal of Visual Impairments & Blindness*, 728-738.
- Hastings, R. P., & Oakford, S. (2003). Student teachers' attitudes towards the inclusion of children with special needs. *Educational Psychology*, 23(1), 87-94.
- Henson, R., K. (2001). The effects of participation in teacher research on teacher efficacy. *Teaching and Teacher Education*, 17, 819-836.

- Heward, W. L. (2006). *Exceptional children: An introduction to special education* (8th ed.). Upper Saddle River, NJ: Pearson Education.
- Hodge, S. R., & Jansma, P. (1999). Effects of contact time and location of practicum experiences on attitudes of physical education majors. *Adapted Physical Activity Quarterly*, 16, 48-63.
- Holman, P. (2011). *An examination of elementary physical education teachers' perceived self-efficacy toward teaching children with orthopedic impairments in Montana: Do teachers feel competent?* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1336)
- Horn, J. L. (1965). An empirical comparison of various methods for computing factor scores. *Educational and Psychological Measurement*, 25(2), 313-322.
- Huber, J. J. (2009). *Influences during student teaching on preservice teachers' attitudes toward the inclusion of students with disabilities in the general education classroom* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3290496)
- Hwang, Y.S., & Evans, D. (2011). Attitudes toward inclusion: Gaps between belief and practice. *International Journal of Special Education*, 26(1), 136-146.
- Individuals With Disabilities Education Act Pub. L. No. 101-476.
- Individuals With Disabilities Education Act (IDEA). (2004). *Building the legacy: IDEA 2004*. Washington, DC: Department of Education, Office of Special Education Programs. Available from <http://idea.ed.gov/>
- Individuals With Disabilities Education Act (IDEA). (2009). *Number of children served under IDEA B disability and age group through 2007*. Washington, DC: Department of Education, Office of Special Education Programs. Available from <https://www.ideadata.org/PartBData.asp>
- Interstate Teacher Assessment and Support Consortium (InTASC). (2010, July). *Model core teaching standards: A resource for state dialogue (draft for public comment)*. Washington, DC: Author.
- Jobe, D., Rust, J. O., & Brissie, J. (1996). Teacher attitudes toward inclusion of students with disabilities into regular classrooms. *Education*, 117(1), 234-245.
- Jung, W. S. (2007). Preservice teacher training for successful inclusion. *Education* 128(1), 106-113.

- Jung, W., Cho, G., & Ambrosetti, D. (2011). Preservice teachers' confidence levels in working with students with special needs: Improving preservice teacher training programs. *Electronic Journal for Inclusive Education*, 2(7).
- Kaiser, H.F. (1970). A second generation Little Jiffy. *Psychometrika*, 35(4), 401-415.
- Kalyva, E., Gojkovic, D., & Tsakiris, V. (2007). Serbian teachers' attitudes towards inclusion. *International Journal of Special Education*, 22(3), 31-36.
- Katsiyannis, A., & Conderman, G. (1995). State practices on inclusion. *Remedial and Special Education*, 16(5), 279-287.
- Kim, J. R. (2006). *The influence of different types of teacher preparation programs on preservice teachers' attitudes toward inclusion, their self-efficacy, and their instructional practices* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3251803)
- Kim, J. R. (2011). Influence of teacher preparation programmes on preservice teachers' attitudes toward inclusion. *International Journal of Inclusive Education*, 15(3), 355-377.
- Knoblauch, D., & Woolfolk Hoy, A. (2008). "Maybe I can teach *those* kids." The influence of contextual factors on student teachers' efficacy beliefs. *Teaching and Teacher Education*, 24, 166-179.
- Kowalski, E.M., & Rizzo, T.L. (1996). Factors influencing preservice student attitudes toward individuals with disabilities. *Adapted Physical Activity Quarterly*, 13, 180-196.
- Kwapy, J. E. (2004). *Attitudes toward inclusive education by K-12 regular and special education teachers*. Capella University, Colorado Springs, CO.
- LaNear, J., & Frattura, E. (2007). Getting the stories straight: Allowing different voices to tell an 'effective history' of special education law in the United States. *Education and the Law*, 19(2), 87-109.
- Larrivee, B., & Cook, L. (1979). Mainstreaming: A study of the variables affecting teacher attitudes. *Journal of Special Education*, 13(3), 315-324.
- Martin, K., & Kudláček, M. (2010). Attitudes of preservice teachers in an Australian university towards inclusion of students with physical disabilities in general physical education programs. *European Journal of Adapted Physical Activity*, 3(1), 30-48.

- Mayhew, J. (1994). *Are preservice general educators being adequately prepared for inclusion?* Paper presented at the March Annual National Conference of the American Council on Rural Special Education, Austin, TX.
- McGregor, E., & Campbell, E. (2001). The attitudes of teachers in Scotland to the inclusion of children with autism into mainstream schools. *SAGE Publications and the National Autistic Society*, 5(2), 189-207.
- Mesibov, G. B., & Shea, V. (1996). Full inclusion and students with autism. *Journal of Autism and Developmental Disorders*, 26(3), 337-346.
- Moore-Hayes, C. T. (2008). *Teacher-efficacy exploring preservice and beginning teachers' perceptions of preparedness to teach* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3290658)
- Morgan, J.A. (2013). *Factors influencing physical educators' inclusion behaviors towards students with autism spectrum disorder* (Doctoral dissertation). Available from Proquest Dissertations and Theses database. (UMI No.3574286)
- Muelman, J., & Heiser, Willem J. (2007). *PASW Categories 18*. Chicago: SPSS.
- National Council for Accreditation of Teacher Education. (2008). *Professional standards for the accreditation of teacher preparation institutions*. Washington, DC: Author.
- Park, M., & Chitiyo, M. (2011). An examination of teacher attitudes towards children with autism. *Journal of Research in Special Education Needs*, 11(1), 70-78.
- Park, M., Chitiyo, M., & Choi, Y.S. (2010). Examining pre-service teachers' attitudes toward children with autism in the USA. *Journal of Research in Special Education Needs*, 10(2), 107-114.
- Parker, B. (2006). Instructional adaptations for students with learning disabilities: An action research project. *Intervention in School & Clinic*, 42(1), 56-58.
- Peterson's colleges in the midwest* (23rd ed.). (2008). Lawrenceville, NJ: Peterson's Publishing.
- Powers, P. J. (1992). *The effect of special education coursework upon the preparation of preservice teachers*. Paper presented at the Annual Meeting of of the Northern Rocky Mountain Educational Research Association, Custer State Park, South Dakota.
- Randoll, N. (2008). *Teachers' attitudes toward inclusion as linked to teachers' sense of efficacy* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. MR45322)

- Romi, S., & Leyser, Y. (2006). Exploring inclusion preservice training needs: A study of variables associated with attitudes and self-efficacy beliefs. *European Journal of Special Needs Education, 21*(1), 85-105.
- Ruble, L.A., Usher, E.L., & McGrew, J. (2011). Preliminary investigation of the sources of self-efficacy among teachers of students with autism. *Focus Autism Other Developmental Disabilities, 26*(2), 67-74.
- Ryan, K. Y. (2007). *Minnesota secondary teachers and their attitudes toward inclusive education* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3290872)
- Salvia, J., Ysseldyke, J. E., & Bolt, S. (2007). *Assessment in special and inclusive education* (10th ed.). Boston: Houghton Mifflin Company.
- Sands, D. J., Kozleski, E. B., & French, N. K. (2000). *Inclusive education for the 21st century*. Stamford: Wadsworth Thompson Learning.
- Savolainen, H., Engelbrecht, P., & Malinen, O. P. (2012). Understanding teachers' attitudes and self-efficacy in inclusive educations: Implications for pre-service and in-service teacher education. *European Journal of Special Needs Education, 27*(1), 51-68.
- Scruggs, T. E., & Mastropieri, M. A. (1996). Teacher preparations of mainstreaming/inclusion, 1958-1995: A research synthesis. *Exceptional Children, 63*(1), 261-265.
- Segall, M. J. (2008). *Inclusion of students with autism spectrum disorder: Educator experience, knowledge, and attitudes* (Master's thesis). Available from http://athenaeum.libs.uga.edu/bitstream/handle/10724/12727/segall_matthew_j_200805_ma.pdf?sequence=1
- Shade, R. A., & Stewart, R. (2001). General education and special education preservice teachers' attitudes toward inclusion. *Preventing School Failure, 46*(1), 60-65.
- Shadreck, M. (2012). Bachelor of education in service teacher trainees' perceptions and attitudes on inclusive education in Zimbabwe. *Asian Social Science, 8*(13), 227-232.
- Sharma, U., Forlin, C., Loreman, T., & Earle, C. (2006). Pre-service teachers' attitudes, concerns and sentiments about inclusive education: An international comparison of the novice pre-service teachers. *International Journal of Special Education, 21*(2), 80-93.

- Sharma, U., Moore, D., & Sonawane, S. (2009). Attitudes and concerns of pre-service teachers regarding inclusion of students with disabilities into regular schools in Pune, India. *Asia-Pacific Journal of Teacher Education*, 37(3), 319-331.
- Shier, E. J. (2002). *Preparing future educators to support inclusion: College students' attitudes following pre-professional preparation* (Master's thesis). Available from ProQuest Dissertations and Theses database. (UMI No. 9340645)
- Sindelar, P. T. (1995). Full inclusion of students with learning disabilities and its implications for teacher education. *The Journal of Special Education*, 29(2), 117-127.
- Siu, A.F.Y., & Ho, E.L.S. (2010). Relations between commitment to a treatment orientation and self-efficacy among teachers working with children with autism. *International Journal of Early Childhood Special Education*, 2(3), 180-192.
- Soodak, L. C., & Podell, D. M. (1997). Efficacy and experience: Perceptions of efficacy among preservice and practicing teachers. *Journal of Research and Development in Education*, 30(4), 214-221.
- Soodak, L. C., Podell, D. M., & Lehman, L. R. (1998). Teacher, student, and school attributes as predictors of teachers' responses to inclusion. *The Journal of Special Education*, 31(4), 480-497.
- Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences*. Mahwah, NJ: Lawrence Erlbaum.
- Stoiber, K. C., Gettinger, M., & Goetz, D. (1998). Exploring factors influencing parents' and early childhood practitioners' beliefs about inclusion. *Early Childhood Research Quarterly*, 13(1), 107-124.
- Swain, K. D., Nordness, P.D., & Leader-Janssen, E. M. (2012). Changes in preservice teacher attitudes toward inclusion. *Preventing School Failure: Alternative Education for Children and Youth*, 56(2), 75-81.
- Tabachnick, B., & Fidell, L. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn & Bacon.
- Taliaferro, A.R. (2010). *Validation of an instrument to explore physical educators' beliefs toward inclusion: Application of self-efficacy theory* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3437471).
- Thomas, D. (1985). The determinants of teachers' attitudes to integrating the intellectually handicapped. *The British Journal of Educational Psychology*, 55(3), 251-263.

- Triandis, H. C. (1971). *Attitude and attitude change*. New York: Wiley.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.
- Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.
- Van Reusen, A., Shoho, A., & Barker, K. (2001). High school teacher attitudes toward inclusion. *High School Journal*, 84(2), 7-20.
- Velicer, W. F., Eaton, C. A., & Fava, J. L. (2000). Construct explication through factor or component analysis: A review and evaluation of alternative procedures for determining the number of factors or components. In R. D. Govvin & E. Helmes (Eds.), *Problems and solutions in human assessment* (pp. 41-71). Boston: Kluwer.
- Walls, S. D. (2007). *Early childhood preservice training and perceived teacher efficacy beliefs concerning the inclusion of young children with disabilities* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3301912)
- Weisel, A., & Dror, O. (2006). School climate, sense of efficacy, and Israeli teachers' attitudes toward inclusion of students with special needs. *Education, Citizenship and Social Justice*, 1(2), 157-174.
- Wilczenski, F.L. (1995). Development of a scale to measure attitudes toward inclusive education. *Educational and Psychological Measurement*, 55(2), 291-299.
- Wilkerson, S. E. (2012). *Assessing teacher attitude toward the inclusion of students with autism* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3531450)
- Wood, M. J. (2007). *Teacher efficacy, teacher attitudes towards inclusion and teachers' perspectives of training needed for successful inclusion* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3259647)
- Woolfolk, A. (2007). *Educational psychology* (10th ed.). Boston: Pearson Education.
- Woolfolk, A. (2010). *Educational psychology* (11th ed.). Upper Saddle River, NJ: Merrill.
- Woolfolk Hoy, A., & Burke Spero, R. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education*, 21, 343-356.

- Yellin, P. G., Yellin, D., Claypool, P.L., Mokhtari, K., Carr, R., Latiker, T., Risley, L., & Szabo, S. (2003). I'm not sure I can handle the kids, especially, the, uh, you know special ed kids. *Teacher Education* 25(1), 14-19.
- Zirkle, C., Fletcher, E. C., Sander, K. L., & Briggs, J. (2010). Certification and licensure requirements for career and technical educators. In V. Wang (Ed.), *Definitive readings in the history, philosophy, theories and practice of career and technical education* (pp. 122-139). Hershey, PA: Information Science Reference.
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